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CANADA JOURNAL  
OF  
DENTAL SCIENCE,

Editors and Proprietors,

W. G. BEERS,  
C. S. CHITTENDEN,  
R. TROTTER,

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OF  
DENTAL SCIENCE  
AND  
DENTAL PRACTICE

VOL. I

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ORIGINAL COMMUNICATIONS.

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NITROUS OXIDE, OR PROTOXIDE OF NITROGEN, AS AN  
ANÆSTHETIC.

BY B. W. DAY, M. D., L. D. S., KINGSTON, ONT., *President of the  
Dental Association of Ontario.*

This gas has been extensively used in all the principal cities of the United States and in the Dominion of Canada, with great success, for the last five years. As an anæsthetic for the extraction of teeth, it is certainly far preferable to any in use for that purpose. The fact of this gas, nitrous oxide, being purely a stimulant, acts upon certain parts of the body, particularly the blood, brain and nervous system. Its action resembles pure atmospheric air, which places it far beyond any stimulant in use at the present day. The principal advantage it has over other stimulants, as well as over all anæsthetics, for minor operations, is, that there is no depression or nauseous effects, which are usual after the administration of chloroform and æther. Nitrous oxide, as an anæsthetic, is single in its action, which elevates and supports the nervous system; while with all other anæsthetics, such as chloroform and æther, their action on the system is due to the sedative effect they produce.

The constituents of this gas, as an anæsthetic, is sufficient to recommend it; and I am of opinion, that the day is not far distant, when nitrous oxide, or protoxide of nitrogen, will be placed in our materia medica as a remedial agent for the cure of diseases, as well as an anæsthetic.

## QUALIFICATIONS REQUIRED OF A DENTAL STUDENT.

BY C. S. CHITTENDEN, DENTIST, HAMILTON, O.

An English writer once said, that in England, when a man finds himself fit for nothing else, he turns wine-merchant. In this country when a man finds himself in a similar condition, it is quite common, for him to "turn dentist;" and the consequence is, that dentistry—or perhaps it would be better to say, the dentist, is not held in such esteem by the public as both he and it ought to be. So many men, who were entirely unfitted for it, by early training and education, have rushed into the practice of dentistry, that the people do not feel that confidence in ours that they do in the medical and other professions; and now that the dentists of Ontario have, by means of their Association, and by Act of Parliament, placed themselves on a new and more substantial basis, it seems a fit and proper time to throw out a few hints as to the qualifications which a man ought to possess who *proposes* to study dentistry.

As by the terms of the "Act," a Board has been appointed "to fix a curriculum of studies to be pursued by students," nothing need be said with regard to that till after the Board shall have acted in the matter; and I will proceed at once to jot down some of the qualifications which it is *essentially necessary* that a man should possess *before he commences his dental studies*. In the first place, he should be a man possessed of a strong and healthy frame and a good constitution; for, although many delicate men have attained to the highest pinnacles of the different professions, men of health and strength succeed best as a rule.

He should possess a fair amount of intellectual capability, as well as untiring industry and perseverance. He should be the most cleanly of clean men. His person, his clothes, his hands, his mouth, and, in fact, everything about him, should be kept in the neatest and cleanest possible condition.

Shakespeare says :

"The man who hath no cleanness in himself,  
Nor is not moved toward washing with clean water,  
Is fit for gutters, stilt-slop puns, and fleas ;  
Let no such man be trusted."

He should also be the most patient of men, or the thousand and one whimsies of those who are to come under his hands will sometimes cause him to lose his temper, the least exhibition of which may cost him, if not the loss of a patron, what he prizes as highly, his good opinion.

He should be a strictly honest man. The old adage, "that honesty is the best policy," is as truly and pointedly applicable to this as to any other calling. Indeed, it may almost be said, that it applies with more force to the practice of dentistry than to all others, for, unless a man's principles are so firmly fixed that nothing can induce him to swerve in the slightest degree from the strictest integrity, he will be too strongly tempted, to always act with perfect honesty in the constantly recurring opportunities for dishonourable practices which every dentist meets with.

He should never make use of deception in the slightest matter, but let every transaction be characterized with perfect truthfulness.

Dentists have'nt always been the most truthful of men.

*Il ment comme un arracheur de dents* is said to be a common expression among the French, when speaking of an untruthful person.

Let us hope that but few years may pass before that blot upon our profession will be wiped away. Hitherto, in this province, there has been no bar to the entrance into our profession of any one who saw fit to do so. The most unlearned and the classical scholar stand side by side.

In the eyes of the community, dentistry has been a catch-penny sort of business, and a certain amount of ingenuity, and the "being rather handy with tools," were about all the acquirements which the public considered it necessary for a man to possess in order to become a dentist. Such would, undoubtedly, be sufficient if dentistry is to be considered merely as a trade; but if it is to be a profession, and to take rank, at some not far distant day, with the *learned* professions, it would seem that a higher grade of literary and scientific education is requisite for those who propose to become students. At the present day, no one will for a moment deny the statement, that the man whose mind has been thoroughly trained in the attainment of a literary, scientific and classical education, is infinitely better prepared to grapple with the "hidden mysteries" of professional lore, than he who has not gone through such a course. The mind of an illiterate man is not capable of seizing the facts and principles of science and arranging them in the best manner for future use. His intellectual faculties require as long and patient drilling, to fully develop their capabilities, as the fingers of the skillful pianist do, to enable him to bring out the finest musical effects. In the study of dentistry, the student will meet with great numbers of technical words and phrases, derived from the Latin and Greek languages, which convey distinct meanings to the mind of the scholar, lighting up his path before him, while the uneducated man is

compelled to grope his way in comparative darkness. It is to be hoped that the Board of Examiners of Ontario, when fixing a curriculum of studies to be pursued by students, will also fix some standard of literary and scientific attainment for those who wish to become pupils. It may not be well to fix the standard at a very elevated point at first. It is possible that a change from no *acquirements at all*, to *very high educational acquirements*, would be a change too radical, and defeat itself.

The bill gives the Board the power "to fix a curriculum from time to time;" so that, if a moderately low standard be adopted at first, it can be raised at a future time. But, pray, gentlemen of the Board, do, at the least, make a good and thorough knowledge of the English language incumbent upon all who may wish to enter our ranks for the future. Unless some standard be fixed and rigidly adhered to by the Board, our profession will gain but half what it ought from the recent enactment. The bill is not all that we could wish, and it will probably be necessary to ask to have it amended at some future session of the Legislature. Still, if the Board and the dentists throughout the country act up to and carry out the real spirit of the bill, as it now stands, it will be but a few years before dentistry will take its proper place, side by side with the other professions.

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## REMARKS ON PATHOLOGY OF THE GUMS.

BY HARRISON ROSS, D.D.S., QUEBEC, P.Q.

Although, strictly speaking, the dentist is limited in his treatment of inflammation or other pathological conditions of the gums, to the removal of causes which act mechanically as irritants and to topical applications, such as the various astringent, sedative and cauterizing agents, &c., &c., I think it highly important that we should all understand thoroughly, the various diseases peculiar to the gums; as a great deal of trouble and suffering may be saved by timely attention.

Should the case require surgical or medical treatment, the properly educated dentist will readily form a correct diagnosis, and refer the individual to his medical adviser, for proper treatment.

By possessing the requisite ability to discern cases of this kind, and placing them in the proper hands, the dental surgeon will benefit his own reputation and that of his profession.

There is a species of inflammation of the gums which, in some individuals, is so persistent, that it may with propriety be termed chronic inflammation.

I have come across a few of these cases; the entire gum, but more particularly the inferior, becomes implicated in this variety of inflammation.

Among other symptoms of chronic inflammation, we find presented a thickened, soft, and very vascular appearance, with a tendency to grow over the teeth, and where there are broken down roots in the mouth, the gum is apt to envelope them entirely.

Dyspeptics, and persons suffering from gastric, intestinal, and hepatic inactivity, are, I think, more than others subject to this kind of sore gum. In many of these cases, the soreness of the mouth and gum being nearly sympathetic, the treatment indicated is first to get rid of the exciting cause by proper medication; after which, there will generally be but little difficulty in restoring the mouth to a healthy state.

A short time since, I had an opportunity of examining the mouth of a young lady who was at the time suffering from a peculiar form of *relitis*; the gums of this patient presented a very singular appearance, being considerably tumefied, the free edges moveable, so that an instrument could be passed a long way down between the gum and roots of all the teeth. There was so large a secretion of *epithelium* as to form a white coat over the entire body of the gums. This was thickest on the least elevated parts; easily rubbed off, and when removed, showed the *papillæ* very much more prominent than is usual. On pressure being applied to the edges of the gums, there was a slight discharge of fœtid, purulent matter. The most curious feature of this case, however, is, that the condition that I have described lasts but a few days at a time. It occurs about two or three times in the course of a year: and has continued to do so for about three years.

During the attacks, the pain and soreness which accompany the other symptoms, render the mastication of solid food a very difficult matter.—Several physicians and dentists have examined this mouth, and attempted to effect a cure, but without success.

This young lady enjoys excellent health, her teeth are tolerably good, and free from deposits of tartar or other irritating causes.

It is my intention to watch this curious case, and I shall endeavour by proper treatment to check its progress, when next the uneasiness about the teeth and gums, which precede its appearance, indicates that *relitis* is again about to set in. Should I be fortunate enough to effect a cure of this peculiar case, I shall have much pleasure in communicating the treatment employed, through the pages of the *Canada Journal of Dental Science*.

## DISEASES OF THE MAXILLARY SINUS.

BY J. O'DONNELL, L.D.S., PETERBORO, O.

*Read before the Dental Association of Ontario, Toronto, January, 1868.*

The subject I have chosen to bring under your notice, viz., Diseases of the "*Antrum Highmorianum*," or "Maxillary Sinus," is one that, to a very limited extent, engages the attention of our profession in this country. It is a branch so closely allied to dentistry proper, that every person wishing to practice our specialty successfully, should be fully acquainted with.

It was not until the knowledge of anatomy had made considerable progress, that the existence of this cavity was discovered: An anatomist of *Padua*, named Casserius, who flourished during the latter part of the sixteenth and early part of the seventeenth centuries, was said to be the first who discovered it, but no correct description of it was given, it appears, until about the middle of the seventeenth century. The credit of which belongs to NATHANIEL HIGHMORE, who published a treatise on anatomy in 1651—hence its name.

The Maxillary Sinus or Antrum of Highmore, is a cavity in the body of the superior maxillary bone, under the orbit; it is somewhat triangular in shape, with its four angles looking towards the malar bone, the spheno maxillary fissures, the *infra orbital foramen*, and below towards the fangs of the *dens sapientiae*. It has one and sometimes more openings, which communicate with the cavity of the nose between the middle turbinated bone. The cavity is supplied with nerves from the olfactory first pair, and from the superior maxillary branch of the fifth pair, the posterior dental supplies the molars and mucus membrane of the Antrum, while the *Infra Orbital* supplies the incisors, cuspidate and bicuspid, also, the mucus membrane of the Antrum. Its arteries are derived from the first division of the fifth pair or internal maxillary branch of the external carotid branch, as follows:—the cavity is supplied from below by small branches of the *superior dental* artery, and from above by branches of the *infra orbital* and other small vessels.

In all cases of disease of the *antra* those fibres and blood-vessels are ruthlessly attacked. Its action on the infra-orbital and posterior dental nerves, conveys the intelligence to the whole system that the symptoms of an alarming disease in this peculiar place is now felt. Deeply interested in the convalescence of this cavity, also, are the muscles in its neighbourhood, viz., *compressor nasi* and *levator labii superioris alacque*

*nasi*. These muscles, situated as they are and performing an indispensable duty, must necessarily feel the slightest attack upon the place in such close proximity. The walls of the cavity are so slight and extremely thin, that any attack on its lining membrane will cause them to distend. A tumour increasing in size, has been known to displace the orbit of the eye.

The floor of the *antra* is frequently of a rough and uneven appearance: this is caused by the fangs of the teeth in the region of the cavity, being of such length that they encroach on its space, merely forcing up the thin wall without directly communicating with the body. In a great many other cases the teeth penetrate the cavity. The walls vary in thickness from tissue paper to half an inch. In the young they are very thin and soft. As we advance in age, the work of ossification goes on within the cavity, without any perceptible change on the outside, until sometimes the walls are half an inch thick.

This cavity is subject to some of the most formidable and dangerous diseases that the medical man or surgeon is called on to treat, and perhaps there is no part of the human system that has been paid as little attention, and has been looked on with as cool indifference. "Diseases are sometimes met with here, over which the most eminent and erudite have not been able to exercise any control, and whose progress is only arrested with the life of the unfortunate sufferer."

All of the diseases of the maxillary sinus are not, however, of so dangerous a nature, and may be easily overcome by proper, timely and judicious treatment. Numerous operations have been performed for arriving at the seat of disease, all of which, I believe, have now dwindled down to the one simple but effectual operation of perforation of the floor. I have practiced this mode, entirely from the fact that, by reference to a good many authors, they nearly all advise it, and I have found the operation more simple and effectual. I might here state that a proper diagnosis of the case should be made before even attempting to operate; because the performance of a hasty operation, in the desire to make a brilliant display, may be as productive of mischief as delay, in a case of the most urgent necessity. "And again, before adopting the example of an operator, or applauding or condemning his notions, we should enquire and examine his reasons for any given mode of operation, notice whether he disregards sound principles based upon reflection and experience; under the influence of preconceived ideas, notice your particular case, and reflect which would be the most judicious mode under the circumstances, in fact, be sure you are right, then go ahead." In the early anatomical history of this cavity, we find the following some of the modes

of operation. DRAKE advises the extraction of one or more teeth, for the escape of collections. MEIBOMIUS, the younger, claims for his father the discovery of this method. COWPER, in addition to DRAKE, suggests the necessity of perforating the floor of the socket—a point upon which DRAKE is silent. JUNKER adopted the operations of DRAKE and COWPER. LAMORIER proposes for the evacuation of the sinus and the preservation of the teeth, to trepan the external wall of the cavity above the third molar. The accumulation of pus, when the nasal opening is closed, causes the walls to distend. In such cases, M. RUNGE suggests the perforation of the distended wall, and employs a bistuary (or scalpel), turning it several times on its axis, to make the opening sufficiently large to admit the finger. DESAULT used two perforators, one sharp and triangular, the other blunt, for the conclusion of the operation, to avoid wounding the opposite wall of the antrum. He selected for the site of the operation the "*canine fossa*." ARMHOLD also recommends the same place. ACREL also, in addition to perforating the floor, as recommended by COWPER, inserted a canula through a fistulous opening formed in the nose. JOURDAIN, an eminent French dentist, instead of evacuating the sinus in any of the ways above mentioned, advised to probe the cavity through the natural opening, and by suitable treatment restore it to health. This, however, has been wholly abandoned, on account of the difficulty of reaching the *antra*, by the peculiar structure of the parts. HUNTER, BELL, and other operators, either adopt one of the ways, viz., perforation of the floor after removing the proper tooth, or trepanning the *canine fossa*. HARRIS says, "when the natural opening is closed, the first thing to be done is to evacuate the cavity, and the most proper way to do this, is through the alveolar cavity of the second molar." Having said this much with respect to the anatomy of this cavity, I will now proceed to give some of the symptoms of disease, in a few observations respecting a few cases that I have treated, the mode of treatment, &c.

It is stated by writers on anatomy, that diseases of this nature are often transmitted from parent to child; that it is a form of disease incident to a scrofulous nature; that a child may, as in consumption, not be troubled with it in his generation, but that his offspring will suffer the penalty. The cases that I have seen were not of this kind, nor did they inherit them. In every one, I have been able to trace them to some constitutional vice on their part. Exposure, tampering and filling the system with powerful drugs, loose habits, violence, &c.

*To be continued.*

## " CONTRIBUTIONS. "

BY W. H. WAITE, D.D.S., LIVERPOOL, ENGLAND.

The appearance of a journal for the first time in any country, the pages of which are designed for the discussion and record of facts relating to the duties of a profession devoted to the relief of physical suffering, and restoration of parts destroyed by disease, denotes a progression in the history of the country, as also in that of the profession whose interests it is thus sought to advance. Such progress all earnest men hail with delight ; and in proportion as the value thereof is realized, so will assistance be afforded right heartily and promptly by those who have the ability, and who really desire the advancement of their race. Looking back upon the short history of dental journalism, (and here let it be noticed that literature, like science, acknowledges none of the boundaries of hemisphere or country), it is easy to trace a gradual but certain emergence from the darkness of jealousy and secrecy towards the clear light of generosity, and free communication of thought and of fact concerning the details which go to make the sum of our duties, as guardians of the masticating powers of our fellow-men. During the past five years more particularly, there may be observed a growing tendency towards the recognition of a principle, thus broadly stated by the wisest of men. " There is that scattereth and yet increaseth ; and there is that withholdeth more than is meet, but it tendeth to poverty."

This process of development furnishes good ground of hope for the success of a new journal, and at the same time removes all excuse from those who possess the small amount of talent necessary for committing to paper a concise statement of their individual practice in certain interesting cases : expressing their individual views upon new methods of treatment, which from time to time are suggested ; and also (as may frequently happen) of making known to their brethren ideas which may occur to their own minds, whether of major or minor importance.

The majority, probably, are unable from various causes to give dissertations on matters of a purely scientific nature, and it may be, but seldom able to suggest anything absolutely new, but there are few amongst us who could not now and then sit down and simply narrate their experience, in reference to some particular, in operating or mechanical work ; and these plain records of personal experience are invaluable as corroborative testimony in behalf of what has been introduced, while they furnish to the young practitioner a warranty for his guidance, which he can obtain in no other way. Short, plainly, but clearly worded communica-

tions, upon matters of every day occurrence in the office or the workshop, not occasionally but frequently made, these are wanted in all our journals, but more particularly to establish the reputation, and secure the circulation of one which, like many a practitioner, is a probationer for public approval.

The *Canada Journal of Dental Science* will form the only medium of communion between numbers of our professional brethren; and we have all felt, over and again, when trying for the first time anything new: "I wonder what Dr. A. or Dr. B. thinks of this." "Do they find it work so?" and the like. Let all, therefore, (and especially those who feel the need of this communion) resolve to avail themselves of the opportunities afforded in this journal, and set the example by determining to furnish their quota of facts and opinions. Thus it will become, what every well-wisher to the profession would desire to see it, a valuable addition to dental literature.

10 Oxford Street, Liverpool, England.

April 1st, 1868.

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## THE BEST METHOD OF TREATMENT OF THE DECIDUOUS AND POORLY CALCIFIED PERMANENT TEETH.

BY W. H. ATKINSON, M.D., D.D.S., NEW YORK.

*Read before the Brooklyn Dental Association, April 1, 1868.*

A full discussion of the subject set apart for our consideration this evening, clearly involves the whole range of that which is technically called "Operative Dentistry!" But that we may have a few points of beginning to discuss, and to open the subject, let us make a few aphoristic statements bearing upon the duties involved and the principles underlying them, and indicating the correct course to pursue when such cases present for our consideration and treatment.

1st. Make careful and thorough examination of the case, and then proceed to completely remove *all foreign substances* from between and about the teeth. This general direction holds good in the cases of deciduous or permanent teeth.

2nd. Should there be ununited figures in the teeth or cavities of decay, proceed to excavate and fill them.

3rd. Should the enamel be badly eroded and the dentine tender, so that the patient has difficulty in mastication, proceed, as before, to clean

the teeth as thoroughly as possible and then dress such places as it is possible to insert it, the cavities with pure creosote on cotton (common fibre or made into a jelly by mixing collodian creosote) covering with pledgets of cotton saturated with sandarac varnish. This should be done in and between the teeth so as to cover the external tender dentine; and then order the free use of lime water as a wash during the day—4 to 8 times, stuffing the pouches of the buccal cavity with pure precipitated chalk at night. Repeat this daily until some of the teeth can be partially excavated; at which time, fully saturate these with creosote, and fill with stiff oxychloride of zinc until gold can be inserted, which usually occurs in from 30 to 120 days.

Great care, close watching and the most scrupulous faithfulness is demanded of both operator and patient, which secured, will be crowned with the most marvellous and happy results!

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## PROCEEDINGS OF DENTAL SOCIETIES.

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### PROCEEDINGS OF THE DENTAL ASSOCIATION OF ONTARIO.

BY J. B. MEACHAM, L.D.S., *Assist. Record. Sec. Brantford, O.*

ST. LAWRENCE HALL, TORONTO, Jan. 21st, 1868.

PRESENT.—B. W. Day, M.D., President; J. Stuart Scott, M.D., Recording Secretary; J. O'Donnell, Corresponding Secretary; W. C. Adams, Toronto, J. Bowes, Ingersoll; D. A. Bogart, Hamilton; C. S. Chittenden, Hamilton; S. B. Chandler, New Castle; W. H. Caid, Whitby; F. G. Callender, Cobourg; T. J. Jones, Bowmanville; Chas. Kahn, Stratford; A. D. Lalonde, Brockville; L. Lemon, St. Catharines; D. Pentland, Peterboro; Robt. Reid, Galt; M. E. Snider, Toronto; R. Trotter, Brampton; H. T. Wood, Picton. *Incipient Members.*—T. Nerlands, Port Hope; L. Van Camp, Berlin. *Visitors.*—B. T. Whitney, M.D., Buffalo, N.Y.; A. M. Roseburgh, M.D., as Delegate from the Medical Alumni Association of Victoria University. Dr. Dewar, member of the Medical Council of Ontario; Dr. G. W. Boulter, M.P.P.; *Honorary Member.*—Prof. C. V. Berryman, M.A., M.D., member of

the Medical Council of Ontario, and others, including a large number of applicants for membership.

J. S. Scott, M.D., moved, seconded by C. S. Chittenden, that the minutes as printed and distributed to members be adopted. Carried.

C. S. Chittenden moved, seconded by J. O'Donnell, that B. T. Whitney, of Buffalo, N.Y., be elected an Honorary Member of this Association. Carried.

J. O'Donnell, Corresponding Secretary, read letters from M. M. Johnston, B.A., New York, and from the Managers of several railways.

The President read his annual address. Referred to Committee to consist of H. T. Wood, F. G. Callender, and J. Stuart Scott, M.D.

J. O'Donnell moved, seconded by R. Trotter, that Act 8 of constitution be suspended, and that Dentists present be allowed to hand in their Credentials. Carried.

J. O'Donnell moved, seconded by J. Bowes, that the following members be a Committee to take into consideration the Bill already printed and report to-morrow at 3 o'clock, the President, the Secretaries, Messrs. Chittenden, Wood, Trotter, Reid, Callender and Adams. Carried.

On motion of C. S. Chittenden, seconded by J. B. Meacham, the Bill was then read without discussion.

Adjourned to meet at 2 p.m., to-morrow.

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## SECOND DAY.

ST. LAWRENCE HALL, TORONTO, Jan. 22nd, 1868.

PRESENT.—B. W. Day, M.D., President in the chair; J. Stuart Scott, M.D., and J. B. Meacham, Secretaries, and a full attendance of members and applicants for membership.

J. O'Donnell presented the first report of Committee on Credentials, recommending the following Dentists as worthy of membership: W. E. Hughs, L. Clements, J. B. Willmott, J. C. McConslan, M. P. Whipple, W. H. Branscombe, E. D. Greene, J. H. Bryant, balloted for and elected.

For Incipient Members: J. H. Padfield, E. D. Green, A. Burns, H. G. Weagant, R. G. Trotter, R. W. Comer, J. E. Huntingdon, R. S. Brown, balloted for and elected.

C. S. Chittenden moved, seconded by M. E. Snider, that the following Dentists be balloted for, notwithstanding their applications are incomplete. Carried. Namely: J. Zimmerman, H. McLaren, H. Meyres, L. Wills, J. Peek, elected. L. Van Camp and J. M. Branscombe, incipient members, were elected as active members.

Dr. Scott read the draft of the "Act respecting Dentistry," as revised by Special Committee for that purpose. He stated that the Committee had availed themselves of the advice and assistance of several prominent gentleman. The draft of the Bill, as reported, met the approval of the Professors of the two Medical Schools in Toronto, and such members of the Medical Council of Ontario as had seen it.

He then proceeded to read the Bill clause by clause.

R. Trotter objected to the Provisional Board of Examiners, as not representing fairly the Province as to locality. He found a large proportion of the Board resided in the eastern portion.

On a motion being made to re-ballot for the Board, C. S. Chittenden said: As a member of the Board residing in the western portion of the Province, he considered it his duty to stand by the gentlemen who had been instrumental in carrying the measure almost to completion. He considered this motion as a want of confidence, and his only course was to resign.

A gentleman, whose name we are unable to obtain, said: He was also from the western portion of the Province; that this was the first meeting of the Association he had been able to attend; that it came with poor grace from members in attendance, for the first time, to endeavour to upset the proceedings of former meetings of the Association. The gentlemen on the board were elected by a meeting of nearly fifty Dentists, and all were invited to attend the last as well as this meeting. If Dentists had not done so they should not find fault now.

J. O'Donnell said he should follow the course adopted by Dr. Chittenden, and accordingly tendered his resignation.

Dr. Scott said he had, in connection with Dr. Day, secured the support of the Medical Council, the Medical Schools, and several members of Parliament; that he had always represented that the names in proposed Bill were placed there by the profession; that however desirable it might be to introduce fresh blood into the management, he feared the consequences, so far as getting the Bill passed this session was concerned. He recognised the claims of western members, and to meet the difficulty he had a motion to submit. If the motion carried he would remain upon the Board, if not he would follow the course taken by Drs. Chittenden and O'Donnell.

J. S. Scott, M.D., moved, seconded by H. T. Wood, "That two members be added to the Examining Board, to be elected from the members residing west of Toronto. Carried. Chas. Kahn of Stratford and J. B. Meacham of Brantford were elected, and the Bill as reported by the Committee adopted unanimously.

The Committee on Credentials reported the following Dentists worthy of membership, viz., A. May, A. C. Stone, M.D., I. C. Proctor, *Incipient*. J. B. Devlin, E. L. Rupert, L. L. Bennett,—elected.

Dr. Whitney, of Buffalo, addressed the Association on Dental Ethics.

Prof. C. V. Berryman, M.A., M.D., addressed the Association at length: He congratulated the Dental Profession on the success they had attained thus far, and urged the importance of united action. He said in raising the standard of requirements, it must be done gradually, and in a way to injure no one. In commencing to teach Dentistry, we must not be discouraged if we had to begin in a small way. That the Medical Profession would assist in any way they could when they saw a disposition on the part of Dentists to improve themselves. He felt honoured at being elected an Honorary Member; he was sure his humble efforts in carrying a resolution at the meeting of the Medical Council were only a duty, and a pleasant duty, towards an important branch of the Medical Profession.

It was of the greatest importance to sustain the Association. He did not suppose formerly that there were as many Dentists in the whole Dominion as he saw before him. Wishing the Association every success in carrying the proposed Bill through Parliament, he retired, having another engagement, upon the time of which he was encroaching. The speaker was frequently cheered, and a vote of thanks tendered him.

A. M. Roseburgh, M.D., as delegate from Medical Alumni Association of Victoria University, addressed the Association. He attended for the purpose of hearing the discussions, and would not take up the time with any remarks at present. He would say, however, he hoped and trusted we would succeed with our Bill before Parliament.

A telegram was received from a member of Dr. Relyea's family, stating *his* inability to attend on account of illness.

Adjourned to 9 a.m. to-morrow.

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### THIRD DAY.

ST. LAWRENCE HALL, TORONTO, 23rd Jan., 1868.

PRESENT.—H. T. Wood, Vice-President in the chair; J. B. Meacham, Assistant Recording Secretary, and a full attendance of members and delegates.

Dr. Wood having to attend a committee meeting, Dr. Clements of Kingston was called to the chair, when H. T. Wood moved, seconded by J. S. Scott, M.D., that this Association proceed in a body to Parliament

this afternoon, to be present when the petition asking for our Bill is presented in the House by Dr. G. W. Boulter, M.P.P. Carried.

Dr. Callender read a paper on operative Dentistry, followed by C. S. Chittenden's Essay.

*(To be continued in next Number.)*

ROYAL COLLEGE OF DENTAL SURGEONS, ONTARIO.—A meeting of the Board of Provisional Examiners and Trustees of the Royal College of Dental Surgeons, of Ontario was held at the Queen's Hotel, Toronto, on the 14th and 15th April, 1868. The full board was present, viz: B. W. Day, M.D., Kingston; C. S. Chittenden, Hamilton; H. T. Wood, Picton; J. O'Donnell, Peterboro'; J. S. Scott, M.D., Cobourg; F. G. Callender, Cobourg; G. V. N. Relyea, Belleville; A. D. Lalonde, Brockville; Charles Kahn, Stratford; J. B. Meacham, Brantford; G. L. Elliott, Toronto and John Leggo, Ottawa city. Mr. Relyea was called to the chair, and Mr. O'Donnell was requested to act as secretary.

The following gentlemen were duly elected officers of the Board:—B. W. Day, M.D., President; Mr. C. S. Chittenden, Treasurer; Mr. J. O'Donnell, Secretary; Mr. H. T. Wood, Registrar.

The chairman appointed the following a committee to draft By-laws for the government of the Board, and report to the meeting at 3 p.m., viz: Messrs. J. S. Scott, M.D., J. B. Meacham, F. G. Callender, J. Leggo, and G. V. N. Relyea. The meeting then adjourned till 3 p.m.

At the afternoon session, the committee, through their chairman, Dr. Scott, submitted a draft of By-laws, which was adopted with slight amendments. After a good deal of discussion on important points connected with curriculum, &c., the meeting adjourned at 6 p.m., till 7:30.

Moved by Mr. O'Donnell, seconded by Mr. Lalonde, "That Messrs. Day, Relyea, Meacham, Leggo and Scott, be appointed a committee to draft blank forms of application, affidavits, &c."

Students applying for the diploma of the College, must have a liberal English education, and after being articled to a Licentiate of Dental Surgery for two years, shall be required to pass an examination in the following branches:

Dental Anatomy,  
Dental Physiology and Chemistry,  
Principles and Practice of Dental Surgery,  
Dental Mechanism and Art,  
Operative Dentistry.

The thanks of the Board and the Professions of Ontario were tendered

to Dr. Boulter, M.P.P., and other members of the Legislature for their efforts for passing the Act legalizing the profession of Dentistry in Canada.

Mr. Relyea moved, seconded by Mr. O'Donnell, That this board, representing the dental professlon of Ontario, having learned with painful emotions of the untimely death of the Hon. T. D. McGee, by the hand of the midnight assassin, wish to record their horror and detestation of so atrocious and bloodthirsty an act, depriving our country of a noble statesman and patriot; and deeply sympathize with his widow and orphans in their bereavement. The motion was ably supported by the mover and seconder, and also by Drs. Day, Meacham and Scott; the members of the board rising, as a mark of respect, when the vote was taken.

The board adjourned on call of the President.

The following resolution was adopted on motion of Mr. Chittenden, seconded by Mr. Relyea, "That this board most heartily approves of the proposal to publish the *Canada Journal of Dental Science*, as annunced by Mr. W. George Beers, of Montreal, and recommend the profession to support it."

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DENTAL ASSOCIATION OF ONTARIO.—The next annual meeting of the above Association will be held in Hamilton on the 14th, 15th and 16th days of July next.

J. STUART SCOTT, M.D., *Rec. Sec'y.*

Recording Secretary's Office,

90 Queen st., West, Toronto, May 21, 1868.

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NOTES FROM THE PROCEEDINGS OF DENTAL SOCIETIES.—Under this heading we purpose from time to time, epitomizing the practical discussions of Dental Associations outside of Canada. Wisdom, like wit, is in narrow compass; and the elaborate debates in Dental, as well as other Societies, generally develop an amount of chaff and fine talk all the more readable for abridgement. A vast amount of sound information will likely be garnered into this department during the year.

At a meeting of the Maryland State Dental Society, July 30, Dr. Arthur submitted the following propositions, as the result of more than twenty-five years careful observation of the phenomena of Dental Caries; and stated his readiness to defend them against any one who felt disposed to dispute his conclusions. The challenge was accepted by Dr. Volck, for some future occasion.

1. That caries will attack the proximate surfaces of all the teeth,

except the inferior incisors of the great majority of persons in the United States, at the present day.

When caries of the superior incisors occurs on the proximate surfaces previously to the twelfth year, its occurrence, sooner or later, on the same surfaces of all the teeth, except the inferior incisors, is almost certain. In the greater number of such cases, caries will show itself before the twentieth year.

This predisposition to dental caries, is greater in the female sex.

2. That caries is not liable to occur at the points indicated, unless the teeth are in contact.

3. That an artificial, permanent, separation of the teeth will arrest superficial caries, or prevent its occurrence if the attack has not effectually begun.

4. That it is a popular fallacy to suppose that caries necessarily follows the removal of enamel.

5. That the most efficient means of preserving the teeth is to anticipate the attack of caries, by separating them, when it is ascertained that caries is likely to occur on the proximate surfaces."—*Amer. Journ. of Dent. Science.*

SOCIETY OF DENTAL SURGEONS OF NEW YORK.—Dr. C. P. Fitch believed we often overtreat, employing powerful escharotics, and unnecessarily, and ingeniously destroying healthy tissue. When inflammation follows the removal of a dental pulp, warm water is a very good dressing. In cases of suppuration of the pulp, the canal should be cleansed, and then filled with a concentrated solution of the permanganate of potassa, which is a better antiseptic than creosote. Some cases may be relieved by opening through the apex with a broach, and applying in the canal tinct, aconite root. Antimonium cruden, a homœopathic remedy, also, answers well in such cases.

Dr. W. B. Hurd uses chlorinated lime for cleansing roots of abscessed teeth, and finds no further treatment required, in nine cases out of ten. After thoroughly cleansing the roots with the chlorinated lime, he fills immediately. This method he applies to acute and chronic cases alike. He sometimes finds cases he cannot cure.

Dr. C. D. Allen relieves acute cases by local bleeding or leeching.

Dr. R. K. Browne claims that dental caries is not commenced by the loss of the earthy salts, but of the gelatinous. The dentinal fibrils, he claims, are neither coagulated liquor sanguinis, nor fibrin, but intercellular matter. There are no more nerve fibres in the dentine than in

cartilage. Beale has been unable to find nerve fibres in dentine, though he has sought, with the highest powers, now employed.

W. B. Franklin has succeeded in getting a solder for aluminum, and had made some improvements in manipulating the metal, by which he was enabled to produce three plates on the aluminum in the time required to make two on vulcanite.

Mr. Hindsman showed an aluminum slate soldered with an alloy of the same metal.

Dr. Fitch stated that Dr. Keep had formerly employed aluminum, but had abandoned it because it would not withstand the fluids of the mouth. He denied that rubber plates act otherwise than mechanically upon the mouth. They dam up the follicles, by which the mucus is retained until it becomes acrid, and produces sore mouth.

Dr. Simons, of Boston, stated that though a stockholder, to a small extent, in the Vulcanite Company, he had decided to abandon Rubber as a base, and employ gold and aluminum instead. He finds that full rubber plates have lasted on an average, six years in his practice.

Dr. C. E. Francis first fills the root permanently when he wants to bleach a tooth, and then fills the crown with chalk, and a solution of chlorinated soda. Had not much faith in it. The teeth generally get yellowish grey afterwards.

Dr. W. H. Atkinson, bleached by placing crystals of oxalic acid in the tooth, and then applying a drop of water on cotton. When the color returns the failure is generally ascribable to defect in the filling. Did not think creosote could have any agency in causing the failure, as he had never filled a tooth without first wetting the cavity with creosote. Has been called upon many times to bleach teeth having living pulps. The gentlemen who employ arsenious acid for obtunding sensitiveness in dentine, will keep us supplied with cases for bleaching. He believed the bleaching property of the oxalic acid, much stronger during the solution of the crystals than afterwards. A few minutes suffice for the bleaching. If the tooth is not decidedly improved in thirty minutes, he sends the patient away with the tooth open.

Dr. C. E. Latimer was cautious how he applied acids to teeth, knowing their destructive action. Bleached a tooth that day with hypochloride of lime placed in the cavity, and moistened with acetic acid. Required about thirty minutes. Did not wet cavity with creosote, but filled at once. Had met with badly coloured teeth having living pulps.—*Dental Cosmos*.

## EDITORIAL.

## INTRODUCTORY.

It is always gratifying to find the particular calling at which we labour, keeping pace in the general advancement of a young country. That Dentistry in Canada has taken a vigorous onward movement, is evidenced by the success attending the action of the members of the profession in Ontario, and by the necessity which has called into existence, as a sequence of this action, a home journal to support and extend the progressive, liberal and reputable principles of Dental Science, Art, and Education in and throughout the Dominion. The present is a period of transition from the unsociable to the associative; from the comparatively stagnant, to the progressive. New life has been infused into our speciality, and a more general readiness to respond to any effort towards improvement and elevation, pervades the professional mind. Pinning our faith to the happy results of this change, and believing it an opportune time to lay the foundation of a Canadian Dental Literature, we offer the "*Canada Journal of Dental Science*" as the literary repository, and representative organ of Canadian Dentistry.

No foreign journal can be expected to supply the wants, or adequately represent the interests of Canadian practitioners; and offering to meet this deficiency, this Journal claims their support. The position of a people without a press cannot be more lamentable than that of a profession, such as ours, without a medium of communication for its members. We trust this Journal will succeed in drawing out a literary talent, and a fund of practical information, which must naturally be dormant in a country that has heretofore never had a home inducement for publication.

It is the inevitable fatality of new experiments in any sphere, to be met with some opposition, from parties who suspect and distrust their motives, and from others who systematically decry any innovation. We anticipate in the outset of this Journal, a share of discouragement; but confidently believe that the members of the Canadian Profession, with a few exceptions, will sustain it for their own credit, and for the credit of the country and the profession it represents. If numerous letters, in answer to the prospectus issued, received from all parts of the Dominion, are at all significant, we feel confident the Journal will fill a gap, and merit hearty support.

The C. J. of D. S., will be independent of any section or clique, though devoted to the interests of any progressive party, because it is progressive. It will aim to improve and elevate the *status* of the profession in Canada, instruct and unite its members, and in honest effort

endeavour to do for Canadian Dentistry, what has been achieved for the profession of England and the United States, mainly through the instrumentality of periodicals of a similar kind.

The original project to issue quarterly, was changed to monthly by request of many friends in Ontario and Quebec. The importance of the movement in the former province, and the necessity of fostering an interest in the principles of the Association, demanded a more frequent issue than four times a year.

Among the list of friends outside of Canada, who have given the Journal assurance of literary aid when possible, we have pleasure in naming Mr. Edwin Saunders, Dentist to Her Majesty the Queen, Mr. Waite, of Liverpool, and other well known English Dentists. Generous offers of assistance in the same way came from Drs. McQuillen, W. H. Atkinson, A. S. Pigott, C. A. Kingsbury, and others in the United States. Neither editors nor subscribers can be insensible to such liberal kindness from members of the profession whose names are as household words.

To confrères in Canada, who have so far aided this undertaking, we return our sincere thanks, and hope before long to add the name of every Dentist in the Dominion. That a home journal can do inestimable good, no one can deny; and that it is now an absolute necessity nearly every one will admit. There is no reason, then, why every individual Dentist in Canada should not take an active interest in its success. With them lies the fate of our young Journal. Let them prove that there is sufficient enterprise in the country to support it.

W. G. B.

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### DENTAL LEGISLATION IN ONTARIO.

In January 1867, a convention of Dentists, called by Dr. B. W. Day, was held in Toronto, to consider the propriety of organizing a Dental Association, and of taking the necessary action to secure an Act of Parliament to require of Dentists an examination touching their qualifications to practice Dental Surgery. A committee was appointed to draft a Bill to report in July following, at Cobourg.

The session of the Association, at Cobourg, was well attended. Twenty-two additional members took part in the proceedings. The draft of the Bill was fully considered, and eight persons recommended to Parliament for members of the Examining Board.

A session of the Association was held in Toronto, in January 1868, when the entire profession of the Province was invited to be present. Fully ninety per cent of the Established Dentists of Ontario were in attendance, Ottawa, only, not being represented. A petition was presented to the Legislature, praying that an Act be passed to require Dentists to

pass an examination, signed by the Professors of the two Medical Schools, in Toronto, and the leading Physicians of Ontario, including several members of the Medical Council.

The Bill was placed in the hands of Dr. G. W. Boulter, M.P.P. The promoters of the Bill communicated with the Dentists of Ottawa, when they signed and returned the Petition, praying for the Act. Petitions were also sent in from the professional men of Belleville, including Albert College, the Dentists of London, and the Reeves and Deputy Reeves of Northumberland and Durham; the professional men of Cobourg, including Victoria University.

No opposition was offered to the Bill on its first or second reading. After it had been printed by the House, and sent by its Members to the Dentists in every Riding, a hundred or more letters were sent to Members, principally from the younger members of the Profession, all supporting the Bill, but each asking a modification to suit his particular case. As might be expected, several Members had amendments to propose. The promoters of the Bill were required to attend before the Select Committee of the House, to meet objections.

The committee desired to report the Bill as nearly as possible as adopted by the Convention held in Toronto, in January last. Slight changes were made, and two additional names added by the committee, to meet views of Members, who otherwise would move amendments, and the Bill was reported as amended. On the third reading, in consequence of further pressure, the Bill was again referred to the Select Committee, to which was added some members who had amendments to propose. This occurred within a week of the close of the session, when communication with Toronto was cut off by a severe snow storm. In reply to telegrams one member of the Bill Committee reached Toronto two days before the closing of the session, and another, one day before. The Select Committee were got together, when Mr. Rykert, the Chairman, presented a draft of the Bill, as he thought, would pass the House, without opposition,—keeping as nearly as possible to the draft adopted by the Association. The committee reported the Bill, and it was passed on the last day of the session.

We have been thus particular in stating the circumstances under which the changes were made in the Bill, as some of its promoters, who were not aware of all the particulars, have censured other supporters of the measure for being too active and too ready to yield to the views of others, when, as a matter of fact, the changes were made by the Select Committee of the House, to meet pressure,—from Members of the House, produced by the many letters sent in by the young members of the Profession.

The thanks of the Dental Profession are due to Dr. G. W. Boulter, M.

P.P., Mr. Rykert, M.P.P., Dr. Baxter, M.P.P., Dr. McGill, M.P.P., Prof. Aikins, M.D., Prof. Berryman, M.A., M.D., Dr. Dewar, and Dr. Whiey for their valuable assistance in promoting this measure, for the elevation and improvement of our specialty. Hon. J. Cockburn, Q.C., Speaker House of Commons, and Mr. R. W. Scott, M.P.P., of Ottawa, also assisted the promoters of the Bill, by freely giving them the benefit of their parliamentary experience. Some features in the Bill are, perhaps, not desirable, yet it is impossible to meet the views of every one, or please all. It is as perfect as Bills usually are when first passed, and if carried out faithfully will result in much good to the Profession. J. S. S.

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"PROFESSIONAL PUFFING."---The March number of the *London Lancet*, page 176, contains an article upon the above subject, in which Dentists in England are placed in a very unfavourable light. The editor says: "Let our readers take the newspapers of any day when books on Homœopathy, Hydropathy, Diseases of the Generative Organs, Brain and Stomach, *Dentistry*, Taking Cold, the Cure of Cancer, &c., are advertised, and he will see in the same column, books by Hospital Physicians, and other respected practitioners."

It is unjust to place the Licentiates of Dental Surgery, who have received their Certificates from an Examining Board of the Royal College of Physicians and Surgeons upon the level of common quacks. In the same number of the *Lancet* we observe an advertisement of Ayer's ague cure, which, on this side the Atlantic, is looked upon as savoring somewhat of quackery. J. S. S.

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SERRATED PLUGGERS.—Serrated Pluggers have revolutionized the art of filling teeth with gold foil, as the use of breech loaders changed the science of war. Operators found they had to learn new principles and practice a somewhat different art from that applied with smooth pointed instruments. The object of the serrations is not to make deep pits in the gold, but to so roughen the surface of each condensed piece, that succeeding portions will adhere. A common fault, however, with new pluggers is that the serrations are too deep, and the points too sharp. Some points must be sharper than others, but none should be so pointed that deep pits are made in the gold which cannot be completely filled up. If the gold is a succession of strata, which has unfilled pits, however delicate, here and there, the operation cannot be satisfactory. It may often be found necessary, therefore, before using new serrated pluggers, to rub them easily on an oil stone to slightly blunt the sharp points, and then thrust them into hard wood to remove any edging. W. G. B.

A HISTORY OF DENTISTRY IN CANADA.—We purpose writing a history of Dentistry in Canada from the earliest period down to the present time, and invite assistance from our colleagues, and any others who may know facts of interest concerning the early practitioners. Would our friends kindly aid us by questioning the oldest inhabitants who know everything—and brushing up their own memories. Send us name, residence, date of practice, reputation held, and any facts of interest concerning professional or public life. As this will be a matter of some labour in collating, we intend accumulating *data* for several months before commencing the history.

W.G. B.

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### AN ACT RESPECTING DENTISTRY.

First reading January 30th, 1868. Second reading February 11th, 1868. Third reading March 3rd, 1868.

Whereas the profession of Dentistry is extensively practiced in the Province of Ontario, and whereas it is expedient for the protection of the public, that there should by enactment be established a certain standard of qualification required of each practitioner of the said profession, and that certain privileges and protection should be afforded to such practitioners: Therefore Her Majesty, by and with the advice and consent of the Legislative Assembly of Ontario, enacts as follows :

1. The persons named in Section two of this Act shall be incorporated and known as the “Royal College of Dental Surgeons of Ontario.”

2. Until other persons be elected as hereinafter provided, Barnabas W. Day, of the City of Kingston, M.D.; Curtis Strong Chittenden, of the City of Hamilton; Henry Tunstall Wood, of the Town of Picton; John O'Donnell, of the Town of Peterborough; Joseph Stuart Scott, of the City of Toronto, M.D.; Franklin Goodrich Callender, of the Town of Cobourg; George Van Nest Relyea, of the Town of Belleville; Antoine Denmark Lalonde, of the Town of Brockville; Charles Kahn, of the Town of Stratford; James Bogart Meacham, of the Town of Brantford, George L. Elliot, of the City of Toronto, and John Leggo, of the City of Ottawa, shall be trustees, and a Board of Examiners, of whom five shall be a quorum, to examine and grant certificates of license to practice Dental Surgery in this Province.

3. The Board of Directors to be elected, as hereinafter mentioned, shall consist of twelve members, who shall hold office for two years; any member may at any time resign by letter directed to the Secretary, and in the event of such resignation, or a vacancy occurring by death or other-

wise, the remaining members of the Board shall elect some fit and proper person from among the licentiates to supply such vacancy.

4. The first election shall take place on the first Tuesday in June, one thousand eight hundred and sixty-eight, at such place in the city of Toronto, as shall be fixed by by-law of the Provisional Board, and the Secretary of such Board shall act as Returning Officer at said election, and the persons qualified to vote at such election shall be the Licentiates of said Provisional Board, admitted without examination, as provided by section twelve of this Act, at least one month before said election, and the said Provisional Board shall issue such certificates to such persons upon their compliance with the requisites of said section, and it shall be the duty of the Secretary to publish in the *Ontario Gazette*, for two weeks immediately after said election, the names of the persons who have been elected members of the Board.

5. The said newly elected Board, as well as all Boards to be hereinafter elected, shall hold their first meeting on the third Tuesday in July, next after the said elections in the city of Toronto, at such place as may be fixed by the Board.

6. Every subsequent election shall be held on the first Tuesday in June, in every second year, after the said first election, and the persons qualified at the said election shall be those Licentiates who have obtained their certificates as provided for in the twelfth section of this Act.

7. The said Board shall, at their first meeting after their election, elect from among themselves a President, Treasurer, Secretary and Registrar, and such other officers as may be necessary to the working of this Act and the rules and regulations of said Board; and the said Board, shall from time to time, in the event of the President being absent, from any cause whatever, elect, from among their number, a person to preside at their meetings, who shall have the same powers, and exercise the same functions, as the President.

8. There shall be allowed and paid to each of the members of said Board such fees for attendances (in no case to exceed five dollars per day and such reasonable travelling expenses) as shall from time to time be allowed by said Board.

9. All moneys forming part of the funds of said Board shall be paid to the Treasurer, and shall be applied to the carrying of this Act into execution.

10. The Board shall have power and authority to establish and conduct a Dental College in Toronto, to appoint Professors, to fix and determine from time to time a curriculum of studies to be pursued by students, and to fix and determine the period for which every student shall be ar-

ticed and employed under some duly licensed practitioner, and the examination necessary to be passed before said Board, and the fees to be paid into the hands of the Treasurer of the said Board, before receiving a certificate of license to practice the profession of dentistry.

11. The said Board may hold two sittings in every year for the purpose of examining students, granting certificates of license, and doing such other business as may properly come before them, such sittings to commence on the third Tuesday in July and January, in each and every year, which may be continued by adjournment from day to day, until the business before the said Board be finished, but no session shall exceed one week, said sitting to be held in the City of Toronto.

12. All persons being British subjects by birth or naturalization, who have been constantly engaged for any period less than five years in established office practice next preceding the passing of this act in the practice of the profession of dentistry, shall be entitled to a certificate of Licentiate of Dental Surgery, upon their furnishing to the said Board satisfactory proof of their having been so engaged, and upon passing the required examination, and upon payment of such fees as may be authorized and fixed by the said Board, for the payment of which the Treasurer's receipt shall be sufficient evidence, and all persons being British subjects, by birth or naturalization, who have been constantly engaged for five years and upwards in established office practice, next preceding the passing of this Act, in the practice of the profession of dentistry, shall, upon such proof as aforesaid, and upon the payment of the fees as aforesaid, be entitled to such certificate without passing any examination.

13. The said Board shall at its first meeting, and from time to time thereafter, make such rules, regulations and by-laws as may be necessary for the proper and better guidance, government and regulation of said Board and College, and said profession of Dentistry, as to fees and otherwise, and the carrying out of this Act ; which said rules, regulations and by-laws, shall be published for two consecutive weeks in the *Ontario Gazette* ; any or all of such rules, regulations and by-laws shall be liable to be cancelled and annulled by an order of the Lieutenant-Governor of this Province.

14. Every person desirous of being examined by the said Board, touching his qualifications for the practice of the profession of dentistry, shall at least one month before the sittings of said Board, pay into the hands of the Treasurer the required fees, and inclose and deliver to the Secretary the Treasurer's receipt for the same, together with satisfactory evidences of his apprenticeship, integrity and good morals ; and it shall be the duty of the Board to hold a sitting for the purpose hereinbefore

mentioned, on the third Tuesdays of January and July, whichever shall first happen, next ensuing the said payment and delivery.

15. If the Board be satisfied by the examination that the person is duly qualified to practice the profession of Dentistry, and be further satisfied that he is a person of integrity and good moral character, they shall grant him a certificate of license and the title of Licentiate of Dental Surgery, which certificate and title shall entitle him to all the rights and privileges of this Act until such time as the Board shall be satisfied that he has been guilty of acts detrimental to the interests of the profession, when he shall forfeit his certificate, and it shall be cancelled; such forfeiture may, however, be waived, and the said certificate of License and all rights and privileges thereunder, fully revived by said Board, in such manner and upon such terms and conditions as to said Board may seem expedient.

16. Every certificate of license shall be sealed with the Corporation Seal and signed by the President and Secretary of said Board; and the production of such certificate of license shall be *prima facie* evidence in all courts of law and upon all proceedings of whatever kind, of its execution and contents.

17. The Secretary of the said Board shall, on or before the fifteenth day of January in each and every year, inclose to the Provincial Secretary a certified list of the names of all persons to whom certificates of license have been granted during the then next preceding year.

18. If any person, after the period of twelve months after the passing of this Act, not holding a valid and unforfeited certificate of license, practices the said profession of Dentistry for hire, gain or hope of reward, or wilfully and falsely pretends to hold a certificate of license under this Act, or takes or uses any name, title, addition or description implying that he is duly authorized to practice the said profession of Dentistry, or shall falsely use any title representing that he is a graduate of any Dental College either in Great Britain or other countries, he shall be liable to a summary conviction, before any two or more Justices of the Peace, for every such offence, and shall, on such conviction, be liable to a fine not exceeding twenty dollars, which said penalty, in default of payment, shall be enforced by distress and sale of the offender's goods and chattels; and it is further provided that no such person shall recover in any Court of Law for any work done or materials provided by him in the ordinary and customary work of a Dentist.

19. Nothing in this Act shall interfere with the privileges conferred upon Physicians and Surgeons by the various acts relating to the practice of Medicine and Surgery in this Province.

## SELECTED ARTICLES.

## ON THE USE OF OXY-CHLORIDE OF ZINC OVER EXPOSED PULPS.

Read before the Massachusetts Dental Association.

BY I. A. SALMON.

At a former meeting of the Society I took occasion to advocate the use of oxy-chloride of zinc over exposed pulps, as suggested to me by Dr. Keep, and at that time read to the Society the result of a few cases occurring in my practice treated in this manner. The result to that time having been so favourable, I have since used it with a great degree of confidence. Could our brothers of the profession be induced to give it a fair trial, I feel sure its use would be very generally adopted, and the present various modes of capping, so often necessitating the use of temporary fillings, and so uncertain in their results, would be dispensed with.

To use oxy-chloride of zinc successfully, considerable care must be exercised. It is important that the materials be pure, and properly prepared.

The oxide of zinc is often impure, containing white lead, chalk and other substances, that of a white colour is not considered of as good quality as the yellowish white.

Should there be an excess of the chloride of zinc, its escharotic property will be strongly marked. The strength of the solution used should be only sufficient to cause the mixture to set.

My method of manipulation is to cut from fine linen a small piece sufficient to cover that part of the pulp I desire to protect; having mixed the oxy-chloride, the piece of linen is saturated with it, a portion being applied to one or both sides, which is then carried upon an instrument and placed directly over the point desired to protect. More or less pain is occasioned, which, however, speedily subsides and does not return.

After a few minutes, and as soon as the mixture is firmly set, during which time moisture must be excluded from the cavity, I introduce the gold and proceed as in ordinary cases.

I have kept a record of most of the cases in which I have used the oxy-chloride of zinc, and have arranged them in the following tabular order; as facts cannot be disputed, I will give it:

Why used.	No. of Cases.	When permanently filled.
To protect pulps (not exposed)	44	At the same sitting.
Over exposed pulps.....	27	21 at the same sitting.
		1 in about one week.
		2 " two "
		1 " three "
		1 " four "
		1 " eight "
Over exposed & bleeding pulps,	7	1 at the same sitting.
		1 in about one week.
		3 " two "
		1 " three "
		1 " four "
Making a total of .....	78	cases, in thirty-four (34) of which the pulp was exposed.

In every case which I have subsequently examined, I have found the tooth perfectly healthy and apparently as sensitive as before the application, and as far as I am aware have not had a failure.

*Dental Register.*

### PIVOT TEETH.

By the following method, which we obtained in a conversation with Dr. T. J. Thomas, a member of the late Graduating Class of the Baltimore College of Dental Surgery, artificial crowns can be attached to natural roots, and what in other cases is the exposed portion of the root, perfectly protected from the action of deleterious agents. Prepare the root, as for an ordinary wooden point; then select a plate tooth of the proper size, shape and shade, and fit it by grinding accurately to the prepared root.

After this is done enlarge the pulp canal by reaming it out as large as the root will admit: that is, make a conical shaped cavity in the exposed surface of the root, allowing the margin of this cavity to be quite near to the circumference of the root, with slight undercuts on the anterior and posterior walls.

After this cavity is prepared, and that portion of the pulp canal beyond it, filled to the apex of the root with gold, make a square metallic

pivot of twenty carat gold alloyed with platinum, in the proportion of five parts of gold to one of platinum. This pivot is made in two parts, which parts are soldered together at the base of the artificial crown, and slightly wedge-shaped.

After this is prepared, a thin piece of platinum plate is bent around the pivot, thus making a square cylinder into which the pivot perfectly fits. After this is done, carefully draw the pivot out of the square cylinder, and solder the edges of the cylinder with pure gold. The pivot is then returned to the cylinder, and the excess of solder and also any rough edges which may exist on the cylinder filed off. After this is done the cavity in the root is carefully dried of all moisture and protected from saliva by means of napkins, and the square tube or cylinder, with the pivot inside of it, is placed in the centre of this cavity, which is filled around it with gold foil in as careful a manner as any crown cavity, allowing the gold to overlap the margin so as to perfectly protect all of the root from the action of deleterious agents. By such means, what in the case of ordinary wooden pivot would be the exposed part of the root is perfectly protected and inclosed by the gold filling, which at the same time gives support to the square cylinder in the centre of it. In placing the cylinder in the root with the pivot in it preparatory to inserting the gold filling about it in the cavity, the split or space between the two parts composing the pivot should range directly back, from the anterior to the posterior, and not from one approximal surface to the other. When this is done the pivot is drawn out from the cylinder, which remains firmly fixed in the root, and that part of the cylinder which may project filed down to a level with the surface of the filling. An impression of this surface is then taken with wax or gutta-percha, and a die and counter-die made of fusible metal, by means of which a disk of platinum plate is swaged to fit accurately the concave surface of the gold filling in the root. When this is done, the convex surface of this disk is thinly covered with wax, and the disk placed in its proper position over the gold filling in the root, and slightly pressed on it in order to obtain an impression by which to cut a square hole to correspond with the orifice of the square cylinder. After this square hole is cut in the disk, the outer end of the pivot is inserted in it, secured by means of wax, and the whole returned to the root (pivot in the cylinder) in order to make certain that the pivot is in its proper position, when it is carefully removed and secured by an investment of plaster and asbestos, in order that the pivot may be soldered to the disk.

This being done, the pivot and disk are again returned to the root, and if found correct, the protruding part of the pivot above the concave

surface of the disk is filed down to a level with this surface. This being done, the disk and pivot are returned to the cylinder in the root, and the plate tooth is placed in its proper position and attached to the disk by means of wax. The disk and pivot with the plate tooth thus attached are carefully removed from the root and invested in plaster and asbestos in order that a backing of gold may be made and the tooth thus soldered to it and the disk.

The tooth is now ready to be inserted, and by separating the two parts which form the pivot slightly at its apex or free extremity, this pivot will tightly fit the cylinder, the two halves acting as springs, which is the object in making the pivot of an alloy gold and platinum, and also in two parts.—*Amer. Journ. Dent. Science.*

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## MISCELLANEOUS.

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CONGELATION BY MEANS OF ATOMIZED SPRAY.—We make the following extract from an article contributed by Dr. Hardman, of Iowa, to the *Dental Register of the West*:—"It is true that, for extraction, it will not do for universal use; as where the sudden reduction of the temperature excites or aggravates pain, especially in neuralgic cases. It is also impossible to establish its influence to purpose about the molars of the lower jaw. Yet, a large proportion of cases exist where it can be used with facility, and is so completely anæsthetic, that patients feel highly delighted with it—will sit for ten or a dozen extractions, where they experience no more pain than is usual for one in the ordinary way. But this is not the extent of its use; the obtunding of sensitive dentine can be so completely and readily accomplished, and still leave the tooth and the nerve healthy, that here it is invaluable. And by it, in many cases, the exposed nerve can be frozen to insensibility, and at once extracted; making the successful treatment of the tooth much more certain and speedy. Again, in the treatment of alveolar abscesses, it will sustain an enviable reputation. My mode is to congeal by applying spray to the gums opposite to the diseased root, and then quickly, with a stiff narrow chisel or sharp drill, cut freely to the seat of the disease, cut up and remove the suppurating membrane, and then medicate with escharotics and alteratives. I use the Bigals instrument with direct spray; have used Richardson's instrument, but without satisfaction. It is evident that much improvement in instruments and in the application of this benumbing process can be accomplished, and the field for its usefulness much enlarged."

**PREVENTION OF SICKNESS FROM CHLOROFORM.**—A writer in the *British Medical Journal* proposes to prevent the frequent vomiting during and after the inhalation of chloroform by simply giving the patient a drink of a few drops of the anæsthetic in water, before commencing the inhalation. The experiment succeeded in eighteen out of twenty cases.

**RUBBER WITHOUT SULPHUR.**—A new preparation of dental rubber has recently been brought into notice, which is said to harden by the escape of the fumes of the bromine and iodine with which it is mixed. No sulphur is used in its preparation; it is not hardened by steam, but by dry heat; and its proprietors assert that it is far purer than the vulcanite, and has neither taste nor smell, and does not change color during the hardening process. It is known by the name of Dried or Iodized Rubber. It is made by adding to iodine one half its weight of bromine, the result being the proto-bromine of iodine, which when combined with rubber in the preparation of three ounces of the paste to a pound of the gum, produces a composition which will harden on being subjected to adry heat of 310° Fah. for one hour.

It is necessary in vulcanizing to use an oven made expressly for this compound. This oven consists of a cast-iron, cone shaped boiler, at least two inches thick in the bottom, with a heavy lid placed over it: no packing or screws being necessary, as dry heat is used. The weight of the lid resting on top of the oven is sufficient to confine the heat, which is generated by a small lamp placed under the apparatus.—*Amer. Jour. of Dent. Science.*

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#### NOTICES TO READERS, CORRESPONDENTS, &c.

Remittance of money, articles for publication, advertisements, and books for review, should be addressed to the Editor at Montreal. Money letters should be registered.

Contributors will oblige by writing as legibly as possible, and only on one side of the paper. We aim principally to develop native talent, and solicit contributions from the members of the Canadian profession. By the new post-office law, manuscript for publication can be sent, marked "Newspapers Manuscript" and unsealed, for 1 cent an ounce.

**PROMPT PAYMENT.**—Intending subscribers will oblige by remitting without delay. Our facilities for enlargement and general improvement will be thereby much increased. We cannot send future numbers to other than subscribers who conform to our terms—*payment in advance*. We cannot promise to supply "back numbers;" so those wishing to subscribe should do so at once, and not six months hence. We can

promise valuable contributions from leading Dentists of Canada, England, and the United States.

EXCHANGES.—As both Editors requires exchanges, we would thank other Journals to exchange with us *in duplicate*, and address to each Editor respectively in Montreal and Toronto.

TO THE MEDICAL PROFESSION.—Prominent Dentists in England, the United States and Canada (many of whom are graduates in medicine) will contribute their experience with nitrous oxide gas, ether spray, and similar agents used in the practice of dentistry, and appropriate form in operations in surgery. The practice of physicians in treating diseases affecting the teeth will be specially reported, making the journal acceptable to any practitioner of medicine.

ADVERTISING.—The C. J. D. S. as the only medium likely to reach the Canadian profession generally, will be the best medium of advertising manufactures, &c., used in dentistry.

Owing to several disappointments, and drawbacks not likely to occur again, it was thought best to defer the *entrée* of the journal until June, rather than issue it late in May.

We send this number of the journal to every dentist in the Dominion whose address we have been able to secure. If every one who receives it would subscribe, we could enlarge to double the present size—as we hope at some future time to do—and issue a periodical second to none. As soon as circumstances admit we will increase the number of pages, and give illustrations. The first attempt of the kind in Canada, cannot be expected to rival older journals in size, but we give as much now, in one number as similar journals in the United States originally gave in three, and if properly sustained hope to imitate their present enterprise. The limited circulation the C. J. D. S. must necessarily have in Canada, where the profession has not such scope, is not as much needed and therefore is not as numerous as in the neighbouring country, constrains us to make the subscription higher than we would prefer; but we have faith in the spirit and good will of Canadian dentists, and feel assured the matter of a dollar will not stand in the way.

In addition to the Journal, each subscriber will receive *gratis* at the end of the year, a Directory of the profession in Canada. The list of subscribers and contributors will be published at the end of each volume.

*Dental Students* should become the *owners* of the first effort of the kind made in Canada. The undertaking, and its contents, will one day be historical; and students as well as teachers should be ambitious of enrolling their names among those who aid to make it successful.

THE  
CANADA JOURNAL  
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DENTAL SCIENCE.

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VOL. I.]

JULY, 1868.

[No. 2.

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ORIGINAL COMMUNICATIONS.

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EXPLORATION OF THE MOUTH.

BY W. H. WAITE, D.D.S., LIVERPOOL, ENGLAND.

In order to make a thorough examination as to the condition of a patient's mouth, it is desirable that the seat of the operating chair should be raised, so as to bring the mouth within easy command of the operator's eye, without necessitating any awkward or uncomfortable attitude. The patient, being seated, may be directed to rinse the mouth with tepid water, in order to remove any fragments of food, mucus, etc., which may be lying between the teeth. Then, defending the lip by a napkin, a probe is taken, and exploration commenced upon the right dens sapientia, proceeding around the upper jaw to the left wisdom tooth, then descending to the lower of the same side, return to the right lower wisdom teeth. The points of each tooth most liable to the attack of disease may be thus enumerated:

- 3rd molars. The disto-buccal angle, and masticating surface.
- 2nd molars. Masticating and buccal surfaces.
- 1st molars. Masticating and mesial surfaces.
- 2nd bicuspids. Distal, and often mesial surfaces.
- 1st bicuspids. Mesial, and sometimes distal surfaces.
- Canines. Approximal, specially distal surfaces.
- Laterals. Approximal surfaces, and lingual rarely.
- Centrals. Approximal and labial surfaces.

These may be called the highways of disease, but careful examination frequently discovers various by-paths in divers directions.

Having ascertained the actual state of each tooth, it is well to acquaint the patient at once with the result, and at the same time indicate the treatment required. This done, there are just two or three things to be observed, viz. :

- 1st. Not to make more than a *proximate* estimate of the cost.
  - 2nd. Never to promise *positively* any result in doubtful cases.
  - 3rd. Promise to do the best in our power.
  - 4th. Never to find fault with other persons work.
  - 5th. Always to treat patient's opinion with respect, at the same time insisting on the maintenance of our own.
  - 6th and lastly. Always to do to our patients as we would be done by.
10. Oxford Street.

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## DISEASES OF THE MAXILLARY SINUS.

BY J. O'DONNELL L.D.S., PETERBORO', ONT.

*Read before the Dental Association of Ontario, Toronto, January 1868.*

### CONTINUED.

The first symptom of disease in this quarter, is the dull, heavy, deep-seated pain in the region of the *middle turbinated bone*, between the orbit and the lower part of the cavity—of course on the side affected. The pain is sometimes spasmodical, and follows the different nerves that supply the antra, to the main line or fifth pair and the portio-dura of the seventh or facial. The pain is not of an exerceiating nature, but becomes general, from the ear forward and upward. This is the first stage of inflammation of the lining membrane of the cavity, and generally the forerunner of a more desperate and unwieldly form. This is generally caused by violence. A blow on the face, an injury to the teeth, or anything that will disturb the tranquillity of the cavity, will cause inflammation of its membrane. A disease caused by violence may not make itself known for a considerable length of time after the accident happens, and depends a great deal upon the constitution of the patient. In persons of a scrofulous nature, the disease is more aggravating, and much earlier discernible. After the pain before mentioned, the mucus membrane of the antra commences to secrete, and shortly afterwards is followed by a discharge of pus, of a dark colour and purulent nature, or of a watery substance, through the natural opening, if not closed. This will be noticed

more particularly when the patient blows the nose, this being the natural way of evacuation; or in the morning, when the patient wakes, he will find this discharge, particularly after lying on the opposite side of the head, affected. When those symptoms appear, the case should be immediately attended to. My mode of treatment has been, to remove, if decayed, the first molar; if this should not be decayed, then, with a view of not sacrificing any sound teeth, I remove any that may be diseased, whether bicuspid or molars; but, all things being equal, I prefer the one first mentioned. This being done, the next thing is to perforate the floor of the socket of the palatine root. If there should be a discharge, which is generally the case, I use a mild disinfectant and detergent; syringe the cavity once a day, usually, in the first stages of the disease. After the opening is made and the cavity is cleared, the local pain ceases. This, although being a good sign, should not prevent further attention and treatment. The cavity should be kept open, and regularly attended to. I have used tincture of myrrh, chloride of soda, *nitric* and *carbolic acid*. The latter, I think the most effectual of any yet used. It would be dangerous to use any of these without diluting them; for the strength of which you must use your own discretion. Of *nitric acid* I have used one drop to thirty of water; while of *carbolic* I have never used more than from one to forty. Constitutional remedies are also necessary; for, although the disease may not have arisen from constitutional defects, still there is always a derangement of the system, that will prevent so speedy and effectual a cure as desired. The best recommended is *syrupus iodi feri* (syrup of iodide of iron), and the compound extract of *sarsaparilla*, in doses three times per day. I also use those for caries and merasis of the maxillary bones, as well as for diseased antra.

*Case 1.*—About seven years ago, a man of robust health and strong constitution, called on me to get a tooth extracted. He complained of a severe pain, but said it was not like toothache. I examined his mouth, but could not find any diseased teeth. He pointed to the second superior bicuspid, left side. I found that this was perfectly sound, and refused to extract it. It was my impression, from what little information I could get from him, that he had diseased antra. Upon further enquiry he informed me that an engine wheel flew to pieces while grinding some instrument; one of the large pieces striking him on the side of the nose, about a year previous. Further, the pain was the same as already described; that, generally in the morning, there was a putrid discharge from one of his nostrils. He allowed me to remove my favorite tooth. I then inserted a trochar, making the cavity about one-eighth of an inch in diameter. The pus was dark blue, and of a most purulent nature:

so much so, that I was obliged to leave the patient for some minutes in order to recover my equilibrium. I used the remedies mentioned, kept the cavity open, and in one month he was as well as ever. This was a case of secretitis of the antrum, brought on by inflammation of its lining membrane. Many cases of a milder nature have come under my notice, all of which I have been successful in combatting.

*Case 2.*—The worst case of diseased antra I ever saw, was one that caused the death of the patient. I was so fortunate that I had not the treatment of the case. It came to my notice by the person calling on me to extract some of her teeth, which was recommended by the family physician. At this time the mucus membrane of the roof of the mouth, as far back as the dens sapientia was in a granulated state. The disease had made such progress that the floor of the antra, on the side affected, was entirely destroyed, but not removed, but would show no resistance to an instrument. The pus had formed a passage down by the palatine root of the first molar, about two years previous, and had always been discharging, and had poisoned the mucus membrane of the mouth. The physician imagined the disease was sore mouth, and confined to that alone. The treatment, in the first place, I believe, was the application of a powerful poison to the protuberance at the edge of the tooth. The constant use of this, I believe, in a great measure assisted to destroy the mucus membrane. The pain was so excruciating that she was unable to sleep. The day after the teeth were extracted, the doctor called on me for my opinion of the case, which I freely gave; recommended, in addition to constitutional remedies, an application of strong carbolic acid, in order to cause a reaction in the lining membrane, and would consequently slough off the dead. I did not see anything more of the person, but heard she died in mortal agony. This case was of a similar nature to the one above mentioned, but further advanced, and caused also by violence—a blow from a stick of wood. The person was of strong constitution, but of low habits; age about 40.

Another case, also of an aggravating nature, was of a person in the last stages of consumption. This person came to me to extract a tooth, or the root of one; he had pain in the region of the nose, but did not feel any in the region of the root; he thought, however, that the root might cause it. He informed me of the symptoms. I enquired his mode of previous living, which proved to be one of a nature that would be hard for the strongest constitution to stand. I extracted the root, which was only kept in its place by the attachment to the gums. The consequence was, that about a tablespoonful of the most poisonous, purulent, black matter followed, which, if anything, was worse than the ca

above mentioned. In sapping the cavity, I found the malar bone so far gone, that it was necessary to keep a handkerchief over the nostrils, to prevent the enema from passing through. The only thing I could do for him, was to assist in preventing his suffering. The injection used was carbolic acid. As long as I was treating him, he did not suffer any consequence, but if a day was missed, he was unable to sleep during the night. He died of consumption, but without any pain in the antra, and very little discharge, which of course was caused by the constant treatment.

I have had many other cases which I have been successful with, and believe that the second case mentioned above might have been cured and the person performing her duty if a proper and timely mode of treatment had been adopted.

It may be asked that supposing an old person is attacked with any disease of the Antra, the teeth are all gone, and consequently the alveolar process filled up by ossification,—what would be the most advisable mode of procedure. In reply I would say by all means the canine fossa; this being the nearest and most easy road of access.

I regret that I am not prepared with a more thorough paper on this subject, but my excuse is (which I hope you will accept) want of time in preparation. I hope, however, to be able to return to the subject again, when I will attempt greater justice to it.

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AN ADDRESS READ BEFORE THE DENTAL ASSOCIATION OF ONTARIO, AT TORONTO, JANUARY 21st.,  
1868,

BY B. W. DAY, M.D., PRESIDENT.

GENTLEMEN :—I have great pleasure in being present here on this occasion, a pleasure the more thorough from the knowledge of the fact that the effects of the present Association have so far been crowned with success; that all true members of the Dental profession have just cause for congratulation. It is not necessary for me, gentlemen, on this occasion, to advocate the claims of the profession to a protection from the invasion of outsiders, charlatans and quacks, which has been so thoroughly accorded to the other branches of the Medical profession, and which is calculated to place it upon its legitimate and proper standing; nor is it of consequence for me to point out to you the manifold benefits at large, as well as to ourselves, from such a consummation; for with these, I feel assured you are equally as well acquainted as myself, and it would be equally

supererogatory for me to say most emphatically that our great aim has not been the formation of a Society for the purpose of monopoly and self aggrandizement, but to guard the public, as well as ourselves, against the pretensions of those illiterate empirics who swarm in almost every profession, and who prey upon the credulity or ignorance of a large portion of the community, and whose qualifications to take rank in the dental corps are about on a par with those of a Hottentot or South Sea Islander. I feel confident, gentlemen, that with this great end in view—alike benefits to the public and ourselves—I can certainly count upon your earnest co-operation with me, and that our united and untiring efforts shall not relax until complete success crowns our exertions, and little shall remain for us to wish for; and in this place, gentlemen, let me occupy your attention for a brief space, by a retrospective glance at the efforts of our labors thus far.

It will be in the recollection of some gentlemen present that in January of last year, in answer to a circular issued by myself, urging the absolute necessity of an organization of the present kind for the protection of the dental profession, nine members of the profession, from different portions of the Province, promptly responded to the call and at once came forward and threw the whole weight of their time and talents into the carrying out of the present scheme, and liberally spared neither time nor money in furthering our great object. To these gentlemen, I think, the Society is indebted not a little for its present prosperous condition, nor can I withhold the just award, so well merited, of praise due to the other gentlemen who so quickly followed their noble example and who now are working unitedly to achieve a complete success. In January then, gentlemen, we must consider the Association to date its rise,—the Association was then formed. And upon the promulgation of the scheme, so well did it take with the dental profession generally, that at a second meeting some six months after, the names of over thirty members were enrolled. This, certainly, was most cheering, and the cause for congratulation among us at this second meeting was the more striking when contrasted with previous efforts which, when directed in the same channel, had invariably proved abortive, and any attempt had resulted in failure; nor was this all, for not only had we actually an enrolment of *bona fide* members, but a fair prospect of being speedily joined to the greater portion of the Dental Profession in the Province. Well, gentlemen, in view of our signal success, and while we felt that we had achieved much, and had just cause for congratulation, we also felt that something more was yet to be done—that the goal was yet to be reached—and, consequently, with this view, we determined to frame a bill for the better and fuller realization of our views as professors of dentistry, in Ontario, and which

we hoped should ultimately extend its benefits to the whole of the Dominion. This was accomplished, and the paper which I now hold in my hand is that bill, and which, I have no hesitation in saying, that not the slightest cause exists for doubting, that in a very short time it will pass into an Act of Parliament, and become a law of the land.

Allow me here to remark, while upon the subject, that it was found necessary to make some alterations in the bill from that which was first submitted for the approval of the Association. These changes were made at the instance of legal advice, which considered the amendments necessary to render the bill more binding and perfect in all its details. These several amendments I shall have the pleasure of pointing out to you, gentlemen, before we separate. Now, gentlemen, I feel certain that you can but agree with me in the conviction, that nothing can be more cheering, nothing more gratifying, than the present aspect of the Association; the Rubicon has been passed, the first great preliminary steps have been taken, and the fact has become patent, that the old style of dentistry—clogged with the rust of ignorance and prejudice of bygone years—is fast sinking into oblivion, and a new era, brighter and more enobling, is fast dawning upon the profession, and in a few years, this organization shall be able to rank under its banner every true member of our important calling throughout the length and breadth of the Dominion of Canada, and when each individual, proud of such membership, shall use his utmost energy to increase and uphold the dignity and high character of the Association, and add one more to the advancement of knowledge and science.

Little more remains for me to say, gentlemen: I had intended to have taken a wider view of the profession from an early date and to have pointed out its steady advancement down to the present time; but time would fail me, and there are other gentlemen present who, no doubt, will favor us with a few remarks on the present occasion; but I cannot take my seat without cordially thanking those gentlemen who so ably seconded, by their time and talent, my humble efforts for the formation of an Association in its early stages, and those who so quickly responded to our call at our second meeting; for I feel, that without such cordial assistance, I should not be here to address you on this occasion, and that the old tale of failure would have been the only thing to tell, instead of, at present, the bright prospect of an organization whose benefits will eventually be felt throughout the whole land. And now, with thanks to those gentlemen on that occasion, and to all of those now present, for the courteous attention accorded to my few imperfect and discursory remarks, I will take my seat.

## THE EFFECT OF TOBACCO UPON THE TEETH.

BY CHARLES A. MONDELET, D.D.S., OTTAWA, ONT.

The dentist is frequently consulted concerning the effects of tobacco upon the teeth, whether it exercises an injurious tendency or is beneficial to them. Were it not for the almost universal habit of smoking, no apology would be sufficient for such a question, as the visible effects must be evident to every one who will impartially examine for himself.

Some writers, and a few eminent practitioners, have encouraged and recommended its use, denying that it was productive of injury, and, excepting some isolated cases, have based their decision upon such, without sufficiently investigating the real nature and effect of its operations. That it must be injurious may be inferred from two circumstances.

1st. The action upon the gums, and thence indirectly upon the vital functions of the tooth.

2nd. By absorption of its active properties into the bony substance of the tooth.

Individuals long accustomed to the use of tobacco are very apt to have turgid and swollen gums, and the sympathetic action between the teeth and gums soon produces a morbid condition in the former, by which they are the more predisposed to disease. The teeth, not only externally, but upon an anatomical examination, will be found highly impregnated with a yellow fluid, evident only in the teeth of persons who use tobacco.

Again, the use of tobacco produces disease of the salivary glands and the pancreas, and injures the power of digestion, by occasioning the person to spit off the saliva which he ought to swallow.

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ANÆSTHETICS.

BY J. W. ELLIOTT, L.D.S., TORONTO, ONT.

I propose to notice a few of the many anæsthetics now in use by the dental profession, as they become fixed in my estimation.

Ether is too well known to require much comment; it being one of the oldest, and perhaps one of the best practical anæsthetics in use at the present day. But there is one case in connection with its use, which occurred about twenty years since, that I will mention. A lady came to me desirous of having a tooth extracted under the influence of ether. The tooth was extracted satisfactorily, and the following day the lady called upon me with her infant at the breast, stating that the

child's breath was strongly impregnated with ether, as was also her own. It is needless to state that the effect on the child was not beneficial, and this fact caused me to use it with great caution.

**Chloroform.**—This anæsthetic stands higher than any other in the estimation of the medical profession. Much has been said and written of its merits and demerits; and were it not that we occasionally hear of death from its use, it would stand prominently above all other anæsthetics. But when we consider the extent to which chloroform is daily used throughout the civilized world, we cannot wonder that some deaths might occur. In many cases where death has resulted from inhalation of chloroform, it has been caused by a wrong mode of administration, and not unfrequently by impure chloroform. As instance of the truth of the above, not one single accident has occurred at the hospital in Edinburgh, although used in that institution for twenty years—they attributing this success to the use of pure chloroform and a proper administration.

Nitrous Oxide Gas does not possess the power of chloroform and ether, and is equally dangerous to life, often causing the patient to say or do that which, in their natural senses would make them blush. It would never stand the test that chloroform has done, and after awhile will only be heard of as an exhibition for school-boys.

Freezing the gums, like freezing any part before a surgical operation, had its day and its advocates, but is now only used by a few in the place of something better, the patient receiving little or no benefit from it, which they find out during the operation. Ether spray is only another mode of administering ether; the vapor being inhaled during the process of forcing the ether upon the gums; its mode of action being rather to etherize the patient than the freezing effects upon the parts.

Of other anæsthetics I will pass them by, not considering them worthy of notice, either in dental or other surgery.

But I hope the day is not far distant when a new agent, both safe and efficacious, will take the place of those now in use; and until then I shall pin my faith on pure chloroform and a proper mode of administration.

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ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO,

BY H. H. NELLES, D.D.S., L.D.S., LONDON, ONT.

The writer was present by invitation at the last meeting of the examining Board of the above Corporation, and was pleased at the unanimity that marked the proceedings.

There seemed to be a desire on the part of all the Board to exercise the power entrusted to them with prudence. Some applicants for license were but little known to the Board, and lest some injustice should be committed, after some consideration the cases were laid over for further consideration.

I did not attend the election of the Board in the evening, as through some previous informalities of that body, they were the only legalized voters, and consequently elected themselves. I do not feel disposed, however, to allow this grievance to influence me in offering any opposition to the present Board, nor yet do I approve of the public attack upon this body in a late number of the *Toronto Leader*, inasmuch as it can do no possible good and will only have a tendency to alienate the members of the profession at large from the Board, and embarrass the latter in the performance of their duty.

I think I can say without fear of contradiction that some of the members of that Board rank foremost in our profession, and are men whose honesty of purpose, in advancing the interests of the profession, can hardly be called in question. And in view of the indefatigable labors of the few, who were the most earnest in securing the passage of our late "Act," I think we ought to show them all possible forbearance.

I would urge upon every dentist in the country the necessity of overlooking past grievances, and of coming forward nobly and manfully, and uniting with the Board in their laudable endeavors to stamp out traveling dentistry, and all such species of quackery from our midst. Let us try, at least, to elevate our profession to such a position of eminence as will enable it to command the respect of every intelligent Canadian.

I am not aware that the Board have any plans matured as yet, for organizing a dental school; but there seems to be an impression prevailing, that, if it is at all possible, some legitimate means of instruction will be provided at an early date.

I would advise all unqualified dentists to avail themselves of every means placed within their reach, and endeavour to prepare themselves for a respectable examination.

I hope the younger dentists, especially, will avail themselves of your reliable journal and of the Dental Association, as valuable sources of improvement. When they have done this, other means, in the way of lectures, &c., will not be wanting.

## CORRESPONDENCE.

## ANSWER TO AN ANONYMOUS LETTER.

(MESSRS. EDITORS, *Canada Journal Dental Science*.)

Dear Sirs,—Through your valuable journal, I wish to call the attention of others to the communication of a *Dentist*, as published in the *Leader*, of the 11th June, and also kindly hint to him, that if he had only signed his name to his article, it would have been answered. I have no design or desire to contradict the facts he speaks of, concerning the no quorum; or the right to get married, &c.; but wish to give some of the facts in this connection. We of the Dental profession, have, for some time, felt the need of something in the form of legislation to give tone to our profession, and require certain fitness on the part of those practising on the human person and form divine, to prevent abuses, and secure efficiency in general for the good of all; making it worth while to spend time means and energy, to become a licentiate of the dental profession of Ontario. While some from inability, and others from press of personal professional duties, suffer this great and growing *need* to pass unattended to, our neighbors on the other side got quite the start of us in many respects, putting us to the blush before the other professions of our own country; thereby prompting the more generous and self-sacrificing to make a start, which they have nobly done.

It would be a strange thing to have all wake up to the importance of this need at once, and act in concert without any *petty* jealousies that somebody will get the best of it in the shape of honors and emoluments. Give them the honors they have so richly earned for two years, and by that time we can choose from among them and ourselves, those we deem most fit to represent us in future, and settle all fairly.

It is not becoming a noble people to fall out with one another on the eve of a great battle or struggle; better suffer the weakness of our brother than give the enemy the advantage. Let us work together for our general good, and that of the community.

Yours, &c.,

Toronto.

W. C. ADAMS.

## PROCEEDINGS OF DENTAL SOCIETIES.

PROCEEDINGS OF THE DENTAL ASSOCIATION OF  
ONTARIO.

BY J. B. MEACHAM, L.D.S.

*Assist. Record. Sec. Brantford, Ont.**(Continued from last number.)*

It was agreed that Mr. Chittenden's essay "Hints to our Patrons," should be published by subscription. 16,500 were subscribed for.

The Corresponding Secretary read a letter complaining that a member of the Association was exhibiting a show case containing specimens of Mechanical dentistry, contrary to a resolution of this Association. The member promised to take it in after his return.

13. J. H. Bryant moved, seconded by Chas. Kahn, "That the President be requested to appoint a Committee on the Constitution and By-Laws, to report at the next meeting."—Carried.

The Chairman appointed E. Ryols, L. Lemon, and J. H. Bryant, as such Committee.

14. J. H. Bryant moved, seconded by Mr. Peck, "That a vote of thanks be tendered to F. G. Callender for his able paper on Operative Dentistry."—Carried.

15. F. G. Callender moved, seconded by W. C. Adams, "That a Committee be appointed to revise Dr. Chittenden's paper for publication, and to supervise the printing of the same; that cards to be inserted be referred to the same Committee, and that Dr. Chittenden be the Chairman."—Carried.

The President appointed as such Committee: C. S. Chittenden, J. O'Donnell, F. G. Callender, and J. Stuart Scott, M. D.

16. J. Stuart Scott, M.D., moved, seconded by J. Bowes, "That when this Association adjourns, it stands adjourned to meet at Queen's Hotel, half-past two o'clock to-day, to proceed to Parliament Buildings, and to meet here at seven this evening."—Carried.

W. C. Adams moved, seconded by J. M. Brimacombe, "That Messrs. R. Trotter, H. T. Wood, and J. B. Meacham, be requested to read papers at the next meeting of the Association."—Carried.

17. J. O'Donnell moved, seconded by R. Trotter,—"That 300 copies of the proceedings of this session be printed in pamphlet form, and that the Recording Secretary order the same."

The Association resumed at half-past ten and proceeded to attend the Session of the Legislature, for the purpose of being present when Dr. G.

W. Boulter, M. P. P., presented a petition of the profession and others, praying that an Act be passed requiring that Dentists should be required to pass an examination. About one hundred members of the profession attended.

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### EVENING SESSION.

ST. LAWRENCE HALL, TORONTO, Jan. 23, 1868.

*Present.*—B. W. Day, M.D., President, in the Chair; J. B. Meacham, Assistant Secretary. Members and visitors.

J. Stuart Scott, M.D., presented the following report:

*To the President and Members of the Dental Association of Ontario.*

GENTLEMEN: Your Committee to whom was referred the President's Annual Address, respectfully report, "That they have considered the subjects referred to in the Address, and concur so generally with the ideas therein advanced, that any lengthened reference to them is unnecessary.

"That there is cause for congratulation in view of the signal success which has marked the efforts thus far put forth for the elevation of the profession in this Province.

"That your Committee recognized most distinctly the efforts of those members who joined the enterprise when once they had the opportunity of doing so.

"It is a cause of regret that there is at present, no means of preventing the ignorant quack from praying upon the credulity of the public. Yet, your Committee look with confidence to future legislation to guard the Profession of Dentistry as other professions are now guarded, and to keep out of its ranks the unqualified, by means of judicious examination. It is desirable, however, that full justice should be done by all parties, and that the means of instruction should be afforded the unqualified before they are cut off from practice. If reasonable opportunities of improvement are neglected they can not justly complain, if prevented practising a profession for the duties of which they are unqualified.

"Your Committee wish to record their appreciation of the valuable services of the President, Dr. Day. He has laboured as, perhaps, few others have done. When success seemed doubtful, he still exerted himself for the elevation of our own specialty, for which he is entitled, as he will receive, the hearty thanks of the whole profession of this Province.

"Respectfully submitted,  
(Signed,)

"H. T. WOOD,  
"F. G. CALLENDER,  
"J. STUART SCOTT."

J. B. Meacham, Brantford, moved, seconded by J. O'Donnell, Peterboro', "That the Report just read by Dr. Scott be adopted, and that the thanks of this Association be tendered the President for his valuable services."

The resolution was supported by several members and adopted unanimously.

J. O'Donnell reported for the Committee on Credentials, G. W. Hale, of Toronto, as worthy of membership. Report adopted. Mr. Hale ballotted for and elected.

1. J. O'Donnell moved, seconded by H. T. Wood, "That the thanks of this Association be tendered to C. J. Brydges, Esq., Manager of the Grand Trunk Railway Company, for his kindness in granting return tickets at one fare for the meetings of this Association."—Carried.

2. M. E. Snider moved, seconded by F. G. Callender, "That the thanks of this Association be tendered to His Worship the Mayor and the Corporation of the City of Toronto for the use of a room in the St. Lawrence Hall free of charge."—Carried.

3. Moved by F. G. Callender, seconded by J. B. Brimacombe, "That three persons be appointed to perform clinical operations at the next meeting in Hamilton."—Carried.

Dr. Day, C. S. Chittenden and F. G. Callender, were appointed in accordance with the above resolution.

4. Moved by R. Trotter, seconded by W. C. Adams, and adopted, "That as some Dental Practitioners in this Province have been in the habit of turning out students to practice, after a few months' pupillage, it is therefore resolved that this Association express its utter condemnation of such practices, believing it to be degrading to the Profession, as well as prejudicial to the interests of the students themselves and the public."

#### Second Report of the Committee on Finance :

"Your Committee report the following accounts correct, and recommend the same for payment:—

R. Romain, printing .....	\$15 20
J. O'Donnell, postage .....	3 66
James Beaty, advertisement .....	7 50
George Brown, " .....	8 25
C. B. Price, attorney's bill .....	7 50
<i>Daily News</i> , printing .....	4 50
B. W. Day, M.D., postage .....	1 00
J. Stuart Scott, M. D., disbursements .....	12 08

Respectfully submitted,

R. TROTTER, Chairman.

## COMMITTEE ROOM,

Toronto, January 23, 1868.

H. T. Wood, Picton, moved, seconded by J. O'Donnell, Peterboro', "That the Report of the Finance Committee, just read, be adopted, and that orders be drawn on the Treasurer for the amounts therein recommended to be paid.—Carried.

J. B. Meacham, Brantford, said he had been using Nitrous Oxide Gas with success for some time; that he would like to hear from the President and others who had experience with this Anæsthetic as to their mode of administering, as well as their manner of preparing it.

B. W. Day, M.D., replied that Laughing Gas was a permanent *Tonic*; that it could be administered in a greater range of cases than Chloroform or Ether, that it was contra indicated in certain conditions of which the family physician should be the judge. He advised care in its use, and that Dentists should introduce it to the public by getting the Physicians in his locality acquainted with its use. As it was particularly appropriate for extracting teeth, Dentists were the pioneers in its use, yet they should not ignore the superior knowledge of medical men who are proverbially humane, and would assist in any legitimate way to relieve pain when properly approached. As to the manner of preparing it, one wash bottle was all that was necessary. It could be kept for any length of time over water, and was best administered from a gasometer.

H. T. Wood said he was using gas made in the way just described, and met with perfect success. He had some difficulty at first, but got on well now.

J. Stuart Scott, M.D., had administered the gas over three hundred times. He met with difficulty when using nitrate of ammonia with nitric acid in excess. The patient would frequently clench the jaws, evidently in consequence of irritation, caused by a trace of nitric acid being present in the gas. He had used one lot of nitrate of ammonia of fifty pounds, and during its use he had not a single case of clenching of the teeth together. He had now abandoned the old way of placing a cork or other substance between the teeth, and used an inhaler with a flange, covering the mouth entirely. He had used some nitrate of ammonia prepared by Dr. Day, and it was second to no other specimen he had tried. He preferred it in the crystal form, it would not absorb so much moisture in keeping. The pulverized, called *fused*, nitrate of ammonia, was exceedingly difficult to keep even in well corked jars. He hoped Dr. Day would continue to prepare it, that the profession might have an article on which they could rely.

Dr. Day said—In consequence of difficulty in procuring a uniform ar-

ticle, he set about preparing it for his own use. He had the apparatus complete for making it, and he could have it prepared for the profession, if any wished to use it, the same as he had it made for his own use. The *Fused* variety was only the crystal form pulverized, and the smaller the particles the more surface would be exposed to absorb moisture.

Dr. Scott said—He wished to qualify his statement with regard to patients clenching their teeth. A few cases had occurred in his practice in which patients from fear or other causes had not inhaled the gas freely, and in these cases he had noticed some rigidity of the muscles of the face, when partially under the influence of the anæsthetic.

The Association adjourned, to meet in Hamilton on the 14th of July, 1868.

ACTIVE MEMBERS OF ESTABLISHED OFFICE PRACTICE OF FIVE YEARS  
OR MORE.

W. C. Adams, L.D.S.....	Toronto.
J. Bowes, L.D.S.....	Ingersoll.
D. A. Bogart, L.D.S.....	Hamilton.
W. H. Branscombe.....	Picton.
J. M. Brimacombe, L.D.S.....	Bomanville.
J. H. Bryan.....	
J. A. Brown.....	Port Hope.
C. S. Chittenden, L.D.S.....	Hamilton.
S. B. Chandler.....	Newcastle.
F. G. Callender, L.D.S.....	Cobourg.
W. H. Card.....	Whitby.
L. Clements, L.D.S.....	Kingston.
B. W. Day, M.D., L.D.S.....	Kingston.
E. D. Greene.....	
Wm. E. Hughes, L.D.S.....	Aylmer.
W. H. Hale.....	Toronto.
T. J. Jones.....	Bomanville.
Charles Kahn, L.D.S.....	Stratford.
J. F. Kennedy, L.D.S.....	Perth.
A. D. Lalonde, L.D.S.....	Brockville.
L. Lemon, L.D.S.....	St. Catharines.
A. May, L.D.S.....	St. Catharines.
H. Meyers.....	Toronto.
J. B. Meacham, L.D.S.....	Brantford.
J. C. McCausland, L.D.S.....	Barrie.
H. McLaren.....	Strathroy.

John O'Donnell, L.D.S.....	Peterboro'.
J. Peck.....	Aurora.
D. Pentland, L.D.S.....	Peterboro'.
W. H. Porter, L.D.S.....	Holland Landing.
J. Oscar Proctor, L.D.S.....	Brighton.
Robert Reid, L.D.S.....	Galt.
G. V. N. Relyea, L.D.S.....	Belleville.
M. E. Snider.....	Toronto.
J. Stuart Scott, M.D., L.D.S.....	Toronto.
A. C. Stone, M.D., L.D.S.....	London.
R. Trotter, L.D.S.....	Brampton.
L. VanCamp, L.D.S.....	Berlin.
H. T. Wood, L.D.S.....	Picton.
J. B. Wilimott, L.D.S.....	Milton.
W. E. Whipple, L.D.S.....	St. Thomas.
D. A. White.....	Ridgetown.
Lyman Wells, L.D.S.....	Simcoe.
H. D. Neugant, L.D.S.....	Morrisburgh.
Z. Zimmerman, L.D.S.....	Zimmerman.

## INCIPIENT MEMBERS.

Dentists of established office practice of less than five years.

A. Burns.....	St. Thomas.
R. S. Brown.....	Galt.
L. S. Bennett.....	Georgetown.
R. W. Comer.....	Kingston.
J. B. Devlin.....	Oshawa.
J. C. Grasse.....	Cobourg.
W. K. Green.....	
J. E. Huntingdon.....	
J. R. Irish.....	Trenton.
T. Neelands.....	Port Hope.
J. H. Padfield.....	
Thos. Rowe, M.D.....	Cobourg.
E. S. Rupert.....	St. Mary's.
R. G. Trotter, L.D.S.....	Toronto.
H. G. Wiggins.....	

Licenses have been granted to the following dentists who have not as yet attended the meetings of the Association:

H. H. Nelles, D.D.S., L.D.S.....	London.
Geo. L. Elliott, L.D.S.....	Toronto.

J. B. Sabine, L.D.S.....	London.
D. Perrin, L.D.S.....	London.
T. L. Fitzgerald, L.D.S.....	Hamilton.
S. T. Clements, L.D.S.....	Napanee.
Wilson Beebee, L.D.S.....	Dunville.
W. K. Graham, L.D.S.....	Brampton.
J. Y. Dorland, L.D.S.....	Bronte.
John Leggo, L.D.S.....	Ottawa.

## ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

A meeting of the Provisional Board of Trustees and examiners of the College was held at the Queen's Hotel, Toronto, June 2nd. The following members were present, viz., Messrs. B. W. Day, M.D., Kingston; C. S. Chittenden, Hamilton; J. O'Donnell, Peterboro'; F. G. Callender, Cobourg; J. S. Scott, M.D., Toronto; G. V. N. Relyea, Belleville; A. D. Lalonde, Brockville; Charles Kahn, Stratford; J. B. Meacham, Brantford, and G. L. Elliott, Toronto. The absent members were: Messrs. H. T. Wood, Picton, and John Leggo, Ottawa. The secretary, Mr. O'Donnell, presented a report of 42 applicants for licenses to practice. The following gentlemen having practised five years, were granted certificates according to the act respecting dentistry: Messrs. Robert Reid, Galt; H. H. Nelles, D.S.S., London; J. B. Sabine, do; D. Perrin, do; A. C. Stone, M.D., do; D. A. Bogart, Hamilton; T. L. Filgiano, do; R. Trotter, Brampton; Leonard Clements, Kingston; Laurence Lemon, St. Catherines; Wm. E. Hughes, Aylmer; M. P. Whipple, St. Thomas; W. H. Porter, Holland Landing; J. C. McCausland, Barrie; J. F. Kennedy, Perth; J. Bowes, Ingersoll; H. G. Weagant, Morrisburgh; J. M. Brimacombe and T. J. Jones, Bomanville; I. O. Proctor, Brighton; S. T. Clements, Napanee; W. C. Adams, Toronto; Lyman Wells, Simcoe; Nelson Beebee, Dunville; W. K. Graham, Brampton; D. Pentland, Peterboro'; R. Van Camp, Berlin; J. Y. Dorland, Bronte; R. G. Trotter, Toronto. At 7 p.m. the licentiates of dental surgery met at the St. Lawrence Hall for the election of a board of directors for the next two years, the returning-officer, Mr. O'Donnell, presiding. The following gentlemen were elected:—Messrs. O'Donnell, Day, Callender, Chittenden, Relyea, G. L. Elliot, J. S. Scott, H. T. Wood, D. A. Bogart, C. Kahn, J. B. Meacham, and A. D. Lalonde. The meeting then adjourned till eight p.m. On returning, a vote of thanks was moved by Mr. Relyea, seconded by

Dr. Day, to Mr. O'Donnell, for his able and impartial duties as chairman, Mr. Chittenden in the chair. The following gentlemen were then elected officers:—B. W. Day, M.D., Kingston, President; J. O'Donnell, Secretary; C. S. Chittenden, Treasurer; and H. T. Wood, Registrar. On motion, the following were appointed a General Committee of Finance and Auditors:—Messrs. J. S. Scott, M.D., J. B. Meacham, C. Kahn, F. G. Callender and George L. Elliott. The following were appointed, on motion, a Committee to draft By-laws and rules for the government of the Board:—Messrs. Scott, Callender, Bogart, Relyea, and Meacham. The meeting then adjourned till to-day.

The Board of Directors elected on Tuesday evening, met at the Queen's Hotel, Toronto, June 3rd, at 9 a.m., pursuant to adjournment—the President, Dr. Day, in the chair. The chairman of the Committee on By-laws, Dr. Scott, submitted a code which was adopted with slight alterations. On motion of Mr. Elliott, seconded by Mr. Callender, the President appointed the following members of the Board a committee to conduct the examination of candidates applying for licenses to practise Dentistry, viz.,—Messrs. Callender and Chittenden, "Operative and Mechanical Dentistry;" Geo. L. Elliot, "Institutes of Dentistry;" G. V. N. Relyea, "Dental Surgery;" J. S. Scott, M.D., "Dental Chemistry," and J. O'Donnell and B. W. Day, M.D., "Anatomy and Physiology." The following gentlemen having practised five years, in compliance with the latter part of clause 12 of the Act respecting Dentistry, were granted certificates:—Messrs. A. May, St. Catherines; J. Zimmerman, and J. B. Willmot, Milton. On motion, the Secretary was instructed to get 500 copies of the articles for students and requirements for examination printed, and to be distributed among the licentiates of the Board. The articles when executed to be signed in duplicate, and one copy to be deposited with the Secretary. The following were the text books recommended for the use of all preparing for examination:—Gray's Anatomy, Dalton's Physiology, Fowne's Chemistry, Harris' Principles and Practice of Dental Surgery, and Taft's Operative Dentistry. In addition, the person will have to perform operations in operative dentistry, and give satisfactory evidence of his ability as a mechanical dentist. Moved by Mr. Relyea, seconded by Mr. Lalonde, and adopted—That this Board will not entertain the application of any individual who has not had five years established office practice, as required by the Act, in order to get a certificate to practice without examination. Moved by Mr. Relyea, seconded by Mr. O'Donnell, and adopted—That a cordial vote of thanks be tendered to the Mayor of Toronto for the use of room in St. Lawrence Hall; also, to Captain

Dick, proprietor of the Queen's Hotel, for his uniform kindness to this Board, and for the gratuitous use of one of his parlors for the meeting. The Board then adjourned to meet at the same place on the 3rd Tuesday in July next, the 21st.

DENTAL ASSOCIATION OF ONTARIO.—The next annual meeting of the above Association, will be held in Hamilton, on the 14th, 15th and 16th days of the present month.

J. STUART SCOTT, M.D.,

Recording Secretary's Office,

Rec.-Secretary.

90 Queen street, west, Toronto, July 1, 1868.

AMERICAN DENTAL ASSOCIATION.—The next meeting of this Association will be held at Niagara Falls, on the last Tuesday of the present month, (28th inst.)

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Illinois State Dental Society, Springfield, May 12.

NOTES FROM THE PROCEEDINGS OF DENTAL SOCIETIES.—Dr. Dean read a paper on *filling pulp cavities*, of which the following is a brief synopsis:—

“ He commenced by saying that the nerves of the roots were supposed to be devitalized, and the roots and surrounding parts in a healthy condition before the subject under consideration came to his special notice. That this narrowed down the subject to the operation of preparing and filling these nerve cavities. He considered this a simple operation, when proper care was taken in preparing the cavities, as a rule. He described his mode of filling rather minutely, and condemned cotton, Hill's stopping, tin and wood. They were all destructible materials and penetrable by the fluids and gases. Cotton, if saturated with creosote, would answer very well until the creosote had become dissipated, which it would certainly do sooner or later, and that other fluids would certainly take its place—to decompose and generate gases destructive to the surrounding parts. Hill's stopping was a non-conductor, but he considered this of no practical importance. Should it be desired by any, it might be used after the foramen had been sealed with gold and in this place, if used, simply as a non-conductor; after filling the apical portion, he would prefer well-fitted corks. The pressure of filling directly upon it would produce corresponding lateral pressure against the tubular walls, rendering the

filling perfect. He thought that the entrance of the fluids into the canals by endosmotic force, might be somewhat prevented by the kreosote and tannin which have been used in their treatment, entering the canaliculi of the dentine and fixing the albuminous matter which they may contain, rendering them impermeable to either fluids or gases. His reasons for preferring gold to any other material, is because it is incorruptible and non-irritant—easier carried to the apical foramen, and if thoroughly packed absolutely shuts out the subtlest intruder."

Dr. C. S. Smith advocated the use of cotton and creosote for filling up pulp cavities, and contended that creosote forms with the animal matter of the tooth—insoluble, thus closing up the dental tubuli, and rendering the canal impervious to the secretions.

Dr. Black uses gold in the form of a ribbon rolled on a broach, and forces this into the canal to the apex of the root.

Dr. Cushing cited several cases in which he extracted teeth, and found gold in the form of wire, protruding through the foramen, in one instance three-eighths, and in another one-eighth of an inch—uses cotton and creosote for filling canals.

Dr. Rivers thought that the majority of fillings in fang filling, was attributable to the imperfect manner in which the operations are performed. Uses gold generally.

Dr. Judd coincided with the essayist in the main. Regards the indeductibility in a material for filling fangs absolutely necessary. Gold cannot be forced through the apical opening of a fang, unless the cementum which closes the foramen be removed by absorption.

Dr. McKellops advocated the use of gold for filling roots on account of its indeductibility; has removed teeth where gold has become exposed by absorption of the cementum from the apex of the fang.

Dr. Lewis asked whether a tooth in which a broach had been broken off in the foramen be kept dry and filled, would oxidize.

Dr. Judd answered that the cementum at the apex of the fang is permeable by the fluids, and that there was a probability of the secretions reaching the broach and causing oxidation.

(We lately removed a gold filling from a central incisor,—in which the nerve was alive,—which had become a dark brown color, apparently from the oxidation of a steel excavator point which had been broken and left in the cavity. W. G. B.)

The chair announced "Receding of the Gums in persons of middle age, Cause and Treatment," as the next subject for discussion.

Dr. Judd thought we had failed to discover a satisfactory cause of the disease. It was not known whether the gums receded by absorption, or

are washed away by an acid fluid secreted by the gums, and acting upon the structure ; thought the use of a stiff brush, with constitutional remedies, would be the proper treatment in such cases.

Dr. Dean thought the absorption, when not caused by local irritation, is the result of defective nutrition.

Under the suspension of the rules, Dr. Freeman offered a paper on the "Observed effect of premature Extraction of temporary Teeth," in which he affirmed that the premature extraction of temporary teeth frequently produced irregularities, and sometimes, as he thought, retarded the early coming of the permanent teeth.

Dr. Forbes thought that the development of the maxillary bones did not depend on the presence of the teeth ; that the blood vessels that permeate the maxillary, supply the osseous material for its formation ; had not observed any ill effects from premature extraction of deciduous teeth.

Dr. Cushing never removed deciduous teeth, unless they became a source of irritation through disease.

Dr. French regarded the presence of the temporary teeth necessary for the development of the jaw.

*Amer. Journ. of Dent. Science.*

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## EDITORIAL.

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### "LOCAL FEELING."

We regret that some regard this Journal from a *local* stand-point with local feelings, and seemingly withhold their support because it is not under the editorial wing of this or that man, or printed and published in the upper Province. We never once thought of boundaries, politics, parties or men in starting this project ; it was an apparent necessity ; and was, with us personally, the renewal of a similar attempt made two years ago, under less favorable auspices than at present. The question "how best to promote and extend progress, add to our knowledge, develop our native talent, protect our interests, and harmonize our views," did not seem to our mind to require any local view for solution. It was felt that the Association would create a cosmopolitism and liberality of sentiment which would extend unbiassed sympathy and support to any Dental enterprise in *Canada*, whether it smacked of Gaspé, or of Sarnia.

To impede or refuse to aid a good object simply because it is not under the stewardship of any particular man or men, or not "to the manor

born," is ungenerous in the extreme, and unworthy of a community or a profession ambitious of improving and elevating their vocation and country. If we adopt new principles and methods in our practices, irrespective of their source, why refuse to extend the same feeling to a periodical especially devoted to the home interests of our Canadian profession? If we determine to look at the project in a local light, when will all be satisfied; where can the journal be published to accomodate every body? We in Canada, have the benefit of the experience and experiments of our brethren of the United States, and England, and may point a moral from the old and dire effects of local feeling in their cases, and the new and happy results of broad and generous views.

*The Canada Journal of Dental Science* owes its origin to the movement in the Province of Ontario; depends mainly upon it for support, and naturally looks to it, as containing the large majority of Canadian practitioners incorporated, as the representative province of Canadian Dentistry. It has so far given precedence and prominence to all matter interesting to this majority, and will continue to do so, as simple justice. But it aims, as well, to affiliate, in one noble confederacy of desire and action, the entire profession of Canada; to coalesce and blend their sympathies, and so arouse a strong intelligent army throughout the Dominion to do battle for the cause born in Ontario. We trust, when the modifications are completed in the Ontario Act, that the profession of the other Provinces will imitate the action of our *confrères* of the west. They will find this Journal their willing auxiliary.

Now that the *Canada Journal of Dental Science* has seen daylight, it seeks to be accepted as the representative organ of Canadian Dentistry; and if the Canadian profession do so much—as we are glad to know—to sustain foreign dental periodicals, should they not generously support one—the only one—at home? We can assure our friends that it is a matter of perfect indifference to us whether the journal is printed in Quebec or Ontario, so long as it is established, and we have a Canadian Dental journal. We would not object to transfer "the wee bairn" to Ontario, if the atmosphere of that province would be thought more salubrious. All we ask is prompt, large support to establish it, now that it is commenced; and if thought best, we will transfer the publication of the second half of the present volume, or the beginning of the next, to the upper Province. Our motives in starting it were sincerely the common good of the Profession; and we trust the meetings in Hamilton this month will smooth away all impediments in the path of its progress, and all progress; conciliate, woo, and win reluctant and opposing parties, and for ever give a quietus to all local feeling.

W. G. B.

## TO THE PROFESSION IN ONTARIO.

Success has marked every effort thus far put forth for the elevation of our specialty, in this the empire Province of the Dominion.

Sixty members of the profession have, in the short space of one year, identified themselves with the Association organized in Toronto, January, 1867. Several others attended the meeting in Toronto in January, 1868, and signed the petition asking for the Act respecting dentistry. Under this Act over forty licenses have been granted; about thirty to members of the Association, and the balance to worthy members of the profession, who have as yet been unable to attend at the Association meetings.

Soon after the Association had obtained a *status*, an invitation was extended to it to send delegates to a meeting of the Medical Alumni Association of Victoria University, to be held in Yorkville. J. O'Donnell, L.D.S., of Peterboro, and R. Trotter, L.D.S., of Brampton, attended as representatives of our Association, and as such were introduced to a meeting of one hundred physicians, including delegates from Montreal and New York, when they presented an address from our profession setting forth the objects of our organization, creditable alike to us and to themselves as delegates. The address was referred to a committee, and the object set forth in it approved of by a resolution of the meeting.

The labor of presenting our cause before the public, and of securing the passage of the present law, has devolved upon a few.

The profession at large have but a faint idea of the expense borne by some, compared with which the twenty dollars for a license, and the three dollars for this journal, sink into insignificance. Several have each contributed cheerfully, from one hundred to two hundred dollars, in time and expense. Let no dentist or student, wishing to become one, now shrink from promptly supporting this journal, the organ, not as some suppose, of the Board only, but of the *whole profession of the Dominion*.

When we had no organ, and no means of communication, Mr. Beers came forward and, at his own expense, established this journal in our interest. He depended partly upon advertisers—they have met his expectation: partly upon subscribers—let us not be wanting in this small amount. It is hoped no local feeling will be allowed to influence Ontario dentists prejudicial to the interests of this enterprise. *Canada* can only support one journal at present.

This number of the journal is sent to every dentist in the Dominion whose address can be obtained; on the receipt of which we hope every Ontario dentist will remit the amount of his subscription *at once*.

J. S. S.

## DENTAL ASSOCIATION OF ONTARIO.

The annual meeting to be held in Hamilton on the 14th, 15th and 16th of the present month, will evidently be one of unusual interest. Since the last meeting, the Act respecting dentistry, approved by the Association, has, with slight alterations, become law.

There are three classes of persons affected by the Act, first: Dentists of five years established office practice immediately preceding the passing of the law; who will, by furnishing the Board satisfactory proof thereof, receive a license to practice without passing any examination. The Secretary of the board, J. O'Donnell, Peterboro, will furnish all necessary blanks and information relating thereto.

Dentists of established office practice of less than five years, in addition to the above requirements, will be entitled to receive a license and the *title of Licentiate of Dental Surgery*, upon furnishing proofs of moral character and passing a satisfactory examination.

A student is required to be articled to a licentiate for two years; and to pass an examination in Anatomy, Physiology, Chemistry, Dental Medicine, Dental Surgery, Operative Dentistry, Dental Science, Art and Mechanism, and Institutes of Dentistry.

The following text books are recommended by the Board: Gray's Anatomy, Dalton's Physiology, Fownes' Chemistry, Harris' Principles and Practice of Dental Surgery, Taft's Operative Dentistry, Richardson's Mechanical Dentistry, Bond's Dental Medicine, Nitrous Oxide, by Prof. Barker.

We are constantly receiving letters of inquiry upon the above points, and as this number of the journal will be sent to all the parties, they are requested to accept the above explanation as an answer to their several letters. In future, unless of immediate urgency, letters of the above nature will be answered through the journal.

Dr. Chittenden writes that he has arranged with the principal hotels to entertain dentists attending the meeting at reduced rates. The Corresponding Secretary is also communicating with railway and steamboat companies for return tickets at one fare, which will probably be granted as on former occasions. Dentists, not members of the association, will please apply to Dr. O'Donnell, Peterboro, for these tickets. The Recording Secretary will be supplied, and forward them in time to the members of the association.

Messrs. R. Trotter, H. T. Wood and J. B. Meeham, are expected to read papers before the association.

The Act respecting dentistry, with its provisions for the three classes of operators above alluded to, will evidently receive much consideration.

It was thought advisable at one time to supply the members of the Association with the proceedings through this journal, but as some of the members desired them in pamphlet form, the Recording-Secretary has had them printed complete with the *Act*, and sent to all the members.

In studying the *Act*, dentists will find it somewhat complicated, but if they will bear in mind the three classes of operators legislated for, they will more easily understand its provisions.

As the American Dental Convention will meet at Niagara Falls the week following, the presence of some American dentists of distinction, may be looked for.

We have already received intimation that Dr. Atkinson of New York, and Dr. Whitney of Buffalo, will be present.

J. S. S.

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## ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

From the proceedings of the examining Board of the above corporation, it will be seen that the first examination of candidates will take place at the Queen's Hotel, Toronto, to commence on the 21st day of this month. The Board have divided the labor, and the examiners will be prepared with questions upon subjects on which each will be expected to examine.

Two days will probably be devoted to the written examinations, and the oral will most likely be concluded on the third day. Dentists of less than five years practice are required by the *Act* to pass this examination previous to 4th March, 1869. The Board have determined to charge ten dollars to each candidate to defray the expense of the examination. In case the candidate is not passed, five will be returned. This is in addition to the license fee, which is twenty dollars. Dentists of five years established office practice, who have not as yet applied for license, will receive it upon the same terms as candidates who have received their license.

A report is being circulated among the younger members of the profession to the effect that the Board intend to carry a high hand, so to speak, towards dentists of less than five years practice. We are in a position to say this is mere nonsense. The Board have no interest in the matter not in common with every other practitioner of dentistry in the Province. The youngest member of the profession will receive equal justice with the older operators. We advise all who feel themselves qualified to pass, to present themselves at the next examination,

while those who feel doubtful, and those who know themselves to be unqualified, to prepare for the examination in January next. While all will receive equal justice, it becomes candidates, in the mean time, to avail themselves of every opportunity of preparing themselves for the examination, which will be a *reality*.

Should any operators be unable to pass at the examination in January, from what we know of the honor of the Board, we are satisfied no obstacles will be thrown in the way of the students who may not be able to prepare in the time specified in the Act. For the credit of the profession, let all pass who are qualified at the examination.

We advise all to attend the meeting of the Association to be held in Hamilton this month, to commence on the 14th. The matter of examination forms no part of the exercises, but the examiners are among the foremost promoters of the Association, and much practical information will be brought out in the discussions.

J. S. S.

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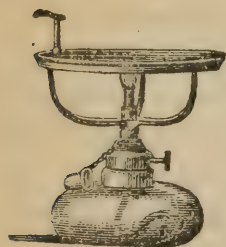
HONOR TO WHOM HONOR IS DUE.—It gives us great pleasure to notice the reference made to the valuable services of Dr. Day, in the report of the Committee of the Dental Association of Ontario appointed on the President's address. His name has always been associated with earnest endeavours to elevate the self respect, and improve the position of our specialty in Canada. The success of the movement which he started in Ontario, and for which he, with his coadjutors, has worked so hard, must ever reflect upon him the highest praise, and command the sincere gratitude of every lover of progress.

PERSONAL.—We wish it to be distinctly understood that both editors of this journal give their services gratuitously, and neither desire nor expect remuneration. Every cent of its income, and more, will be expended upon it. The expenses of originating the project, and several incidental expenses since, have not and will not be charged against it.

We earnestly ask subscribers to remit immediately. The amount is small to each individual, but in the aggregate is large. We should like nothing better than to be able to surprise our readers by enlargement within a few months; but subscribers must furnish the "sinews of war" as soon as possible. The journal will be worth ten times the subscription to any dentist.

— We are indebted to our foreign exchanges and the press of Canada, for kind notices and approval of this journal.

**A CORRECTION.**—The selected article in the last number, on "The use of Oxy-chloride of Zinc over exposed nerves," bears the name of Dr. I. A. Salmon, and we see by a correction in the *Register*, from which it was copied, that it was written by Dr. T. B. Hitchcock.



**THE WHITNEY LAMP.**—The accompanying cut represents an annealing lamp, designed by B. T. Whitney, M.D., of Buffalo, N. Y. It is intended for annealing gold, while filling. The arrangement for raising and lowering the wick at the pleasure of the operator is complete, giving the degree of heat required. The gold can be taken from the tray with any *instrument*, without having the temper of the instrument drawn by the heat. Alcohol is the proper material to burn in the lamp.

—The next No. of the Journal will contain the proceedings of the Hamilton meeting of the Dental Association of Ontario.

—Parties having more than one number of No. 1, and others to whom No. 1 was sent and who do not wish to subscribe, would confer a favor by returning them by post.

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## SELECTED ARTICLES.

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### NECROSIS OF THE LOWER JAW.

Jacob M., æt. 12. This patient, a stout, hale looking boy, came under Prof. Gross' observation last summer.—He had had a tooth extracted; during that operation the probability is that the alveolar process was broken, leading to inflammation followed by necrosis of the right side of the lower jaw-bone. The parts were scraped, some dead bone removed, and for a while the case was progressing favorably. Afterwards an abscess formed, and the lad presented himself last week with two papillæ, nipple shaped processes, over the right ramus of the lower jaw.

Necrosis is a very common affection not only of the jaw bone, but of various portions of the skeleton. In the jaw bone it may be produced by violence or be the result of ordinary inflammation, or inflammation of a specific character, scrofulous or syphilitic. In this case it was produced by injury inflicted in the extraction of a tooth. The alveolar process was

fractured, followed by its inflammation, death and removal of a portion; for some pieces of bone had been discharged before the patient applied for treatment. At the operation referred to, several pieces were also removed. The case was doing well for some time, but it was apparent the lad was not cured. Subsequently the inflammation extended to the ramus and posterior portion of the body of the bone, leading to necrosis, as is indicated by the nipple shaped processes present.

The boy was put under the influence of chloroform. The probe came in contact with a rough surface of bone. The two openings were connected with the knife, and a large piece of dead bone extracted. The two masses of semi-organized granulations were scraped away, which must always be done, for as long as they exist there can be no healthy action.

The part should be kept clean by syringing with tepid water, or water impregnated with permanganate of potassa, or chlorinated soda, making a detergent lotion.

This case illustrates the fact, that the extraction of a tooth not well performed may be followed by prolonged suffering. It was upwards of a year ago that the extraction was affected.—*Philad. Med. and Surg. Reporter*.

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## MISCELLANEOUS.

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THE NEW ANÆSTHETIC.—“Although laughing-gas has only quite recently and suddenly come again before the notice of the profession, the properties of the oxides of nitrogen have not been wholly neglected by physiologists. In two papers published about four years ago, Dr. Hermann arrived at some interesting results touching the physiological action of nitrous and nitric oxide. (Reichert Du Bois Reymond's *Archiv*, 1864, p. 521; 1865, p. 469.) From these researches it would appear that, while laughing-gas is very readily absorbed by blood, it neither enters into combination with, nor produces changes in, nor suffers changes from, the action of blood. As our readers are aware, it is now generally believed that the oxygen present in blood exists in a peculiar loose combination with the blood corpuscles, and is not retained by simple physical laws of absorption. Laughing-gas, on the contrary, is merely physically absorbed, and blood will take up rather less of it than it will of water—that is to say, 100 volumes of blood will, at the temperature of the body, absorb somewhat less than 60 volumes

of laughing-gas. Blood saturated with laughing-gas shows no sign of change; the spectrum appearances are the same; the blood corpuscles are unaltered; and, according to Hermann, the oxygen is not driven out. In the blood, and probably in the body, laughing-gas suffers itself no change. It does not give up its oxygen for purposes of oxidation, as Sir Humphrey Davy thought. It gives rise, therefore, to no free nitrogen, but goes out of the body as it comes into the body, pure and simple laughing-gas. Hence it is itself of no respiratory use; and, when mixed with a quantity of oxygen sufficient for the needs of the economy, has no more direct effect on respiration than has nitrogen or hydrogen. From these facts, we may gather that the mode of action of laughing-gas is that of a body having distinct effects on certain parts of the system, and does not depend, like that of some other agents, on any direct interference with the function of respiration. Readily absorbed by blood, and yet with its limit of absorption soon reached; passing away from the blood into a pure atmosphere as quickly as it passed into the blood from the receiver in which it was previously confined; suffering no change itself, and causing no obvious gross chemical changes in the fluids or tissues of the body, it certainly seems peculiarly fitted as an agent for producing temporary conditions of the economy. On the muscles and hearts of frogs it has no more effect than nitrogen or hydrogen.—*British Medical Journal*.

**TREATMENT OF DENTAL PULPS.**—Dr. W. H. Atkinson, at a meeting of the Brooklyn Dental Association, gave the following method of treatment:

“When a pulp is exposed and aches, I remove all extraneous matter from the part; if this does not arrest the pain I dry out the cavity by applying to it pieces of bibulous paper until it is perfectly dry.

I then apply pure creosote and hold a dry napkin around the tooth for a minute, and if the pain continues I remove the napkin and syringe the cavity with tepid water, washing out all the creosote, and then apply a fresh napkin and proceed as before; then apply the best chloroform upon a pledget of cotton.

If this does not succeed repeat it again, and apply the tincture of aconite. In most cases it will not be necessary to repeat this process. I next proceed to prepare the cavity for the filling. I apply the napkin or sheet rubber to keep dry, and then, delicately, fragments of bibulous paper until all moisture is removed, when I place a drop of creosote on the exposed part, and then put a soft mass of osteo-plastic over the creosote.

I wait for the osteo-plastic to firmly set, then remove the excess and fill boldly.”

ANTIQUITY OF TOOTHPICKS.—Toothpicks were in common use in the time of the Cæsars. Martial tells us that those made of a chip of mastic wood—*Lentiscus*—are the best; but, if you run short of such timber, a quill will serve your purpose.—See Lib. xiv., Epgr. 22.

## DENTISCALPIUM.

*Lentiscum* melius; sed si tibi frondea Cuspis  
Defuerit, dentes *penna* levare potest.

In another epigram he ridicules an old fop, who was in the habit of digging away at his gums with his polished *Lentisks*, though he had not a tooth left in his head,—Lib. vi., Epigr. 64.

## AD ESCULANUM.

Medio recumbit imus ille qui lecto,  
Calvam trifilem semitactus unguento,  
*Foditque* tonsis ora laxa *lentiscis*;  
Mentitur, Esculane:—non habet dentes.

LEGISLATION IN OHIO.—The law compelling dentists to get a diploma from a Dental College, or a certificate of qualification from the State Dental Society, or some local society, now exists in Ohio. It does not operate on those now in practice until 1873. A similar bill was before the Indiana Legislature last year.

DENTAL COLLEGES.—There are now seven Dental Colleges in the United States, one in England, one in Germany, and one in Canada.

THE LONDON (Eng.) DENTAL REVIEW has ceased to exist after a valuable career of ten years.

DR. JACOB GILLIAMS the oldest Dentist in the United States, if not in the world, died in Philadelphia, on 4th of February at the age of 85.

A METHOD FOR REMOVING AMALGAM FILLINGS.—Dr. J. Payne gives the following method for removing amalgam fillings which may save much time and labor: "I have two instruments made of silver, or silver points, somewhat resembling pluggers. One of these is straight and strong enough to bear considerable pressure. The other is smaller and bent at an angle of about forty-five degrees, so that it can be introduced between the back teeth. The points of both are flattened. When I wish to remove one or more plugs, I scrape the surface bright

and dip the silver-pointed instrument into a quantity of quicksilver. The silver having an affinity for the mercury, a quantity will be taken up, adhering to the point which may be carried to the plug. There is a stronger affinity between the quicksilver and the amalgam than between the quicksilver and the instrument, and it will therefore immediately leave the instrument and unite with the plug. The quicksilver will reduce the hardest amalgam plugs to their original plastic condition in a few minutes, when they can be removed without trouble. Ten or a dozen plugs may be removed in this way in as many minutes, which otherwise would be a good half day's work. The operation may be facilitated by using considerable pressure in rubbing the mercury on the plugs with the instrument. I rub it on all the plugs, and then commence on the first one and cut into it with a strong excavator or sharp drill, and then add more mercury and pass on to the next plug, and so on excavating and adding more mercury till I have gone over all the plugs. In the absence of the proper instruments, a strip of thick silver plate, or a piece of silver wire fastened in any ordinary handle will answer as a substitute. Before dipping the point of the instrument in the mercury, it should be well scraped to remove any oxidation caused by the mercury at a previous time.—*Amer. Jour. Dent. Science.*

EDUCATED STUDENTS AND DENTISTS.—If we expect competent dentists, we must have educated students. An old physician once told us that, "an uneducated community never supports an educated physician." And the converse of this is true. An educated community will never support an uneducated dentist. Let the *training* be thorough.—*Dental Office and Laboratory.*

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#### NOTICE TO READERS, CORRESPONDENTS, &c.

Remittances of money, articles for publication, advertisements, and books for review, should be addressed to the Editor at Montreal. Money letters should be registered.

Contributions are respectfully solicited. Contributors will please write as legibly as possible, and only on one side of the paper.

*Exchanges.*—We would thank other journals to exchange with us *in duplicate*, and address to each editor respectively, in Montreal and Toronto.

*Advertising.*—We would call attention to the facilities offered by the journal for advertising.

Each subscriber receives the "Canada Dental Directory" *gratis*, at the end of each year. The names of subscribers and contributors will be published annually.

THE  
CANADA JOURNAL  
OF  
DENTAL SCIENCE.

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VOL. I.]

AUGUST, 1868.

[No. 3.]

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ORIGINAL COMMUNICATIONS.

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HOW TO RESTORE OLD AMALGAM FILLINGS, AND  
THEIR REFUSE TO THE ORIGINAL STATE.

BY L. CLEMENTS, L.D.S., KINGSTON, ONT.

Coat the inside of a clean crucible with borax, put your refuse amalgam in it, place the whole in a common stove or furnace over a charcoal or common dry wood fire; heat up slowly so as to allow the mercury to evaporate. After the mass is melted, allow it to stand ten or fifteen minutes in a molten state, then pour into an ingot mould and file up in the ordinary manner.

I recently treated a lot in the above manner, that had been accumulating in my office for eleven years; and to my great satisfaction I found that I had a few ounces of amalgam, equal, if not superior, to any in the market. The above process may not be new to some members of the profession, but as it is something new to myself, I give it for what it is worth.

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NECROSIS OF THE JAW CAUSED BY THE WISDOM TOOTH.

A CASE IN PRACTICE.—BY SAMUEL LEE RYMER, L.D.S., V. P. ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

The appearance of a creditable journal devoted to the best interests of the Dental Profession in the loyal and patriotic Dominion of Canada, is an event to be noted with gratification by all who desire to witness its material progress, and, I think, it is so noted; especially by those in the

mother country and here, who, for a considerable period, (twelve years), have been anxiously working to place the profession upon a satisfactory basis. I learn by a communication received from the editor of *The Canada Journal of Dental Science*, that he is particularly desirous of obtaining articles for his periodical from members of the profession in England, and he favors me with a request to assist him in that way. I cannot but regret that, from the limited time at my disposal, I am unable efficiently to aid him, but I hope this will be rather an advantage than otherwise, and that more able pens will contribute to fill the space which mine might unworthily occupy. To refuse a few lines, however, would seem to make it appear that I took no interest in his labours; therefore I have pleasure in condensing some notes of a case which I published in the *Dental Review*, in October 1866, with certain additions as a sequel to the case, and which cannot now appear in the *Review*, that journal being now, (what I hope the *Canada Journal* will never be), *defunct*.

The dental surgeon has now and then presented to his notice cases of necrosis of the alveolar processes, sometimes involving the body of the jaw, which may mostly be traced to irritation from diseased teeth or stumps, although the causes may be other and more obscure.—(See Dr. Chapin Harris' "Principles and Practice," Dr. Richardson's Lectures, Mr. Tomes' System of Dental Surgery, &c.") Again, in rare instances, the disease may be idiopathic.

For the most part, necrosis from whatever cause it may occur, attacks the weakly and debilitated,—not always so, as here is a case in point to show. In February, 1865, Mr. E. B——, a medical man in active practice, consulted me under these circumstances:—On the 1st of the month having felt some inconvenience from a stump of the second lower molar, right side, he extracted it himself and experienced relief immediately, but the relief was not of long continuance, for on the 3rd of the month, pain was felt about the region from whence the stump was removed: and as this increased from day to day, my opinion was requested. Upon examination I could find nothing to account for the pain except that the gum at the point of extraction had not healed, otherwise the parts looked healthy. The neighbouring teeth were sound and bore testing without inconvenience. It should here be stated that the patient was of middle age, free from constitutional affection, and enjoying an average degree of health. A thorough examination was subsequently made at the patient's residence. During the interval of two or three days, between the first and second interviews, the pain had increased to an almost unbearable extent: the appearance of the mouth had scarcely changed, and the wound in the gum showed no signs of closing. I enquired of the patient whe-

ther he was certain the whole of the stump had come away. Of this he was positive. Yet I could not help coming to the conclusion that the irritation was owing to a splinter of some kind. In carefully probing the wound in the gum the walls of the socket were plainly felt and found intact, but deep down the point of the probe came upon a hard substance, which I knew to be tooth substance, and which I thought at the time was a root of the second molar. The diagnosis of the case now seemed to me determined—the irritation of this substance set up inflammatory action in the bone, extending to the dental canal, and so causing compression of the nerve therein contained. The patient was now so reduced as to be obliged to temporarily relinquish practice, but he was willing to submit to any operation likely to secure relief. I proposed an attempt to extract the splinter supposed to remain in the jaw. Before the attempt, which was consented to by the patient, I again explored with the probe, and found, as before, a distinct indication of tooth substance deep down. The patient being steady I employed a pair of fine long beaked lower stump forceps, and was able to nibble at the object sought after in a tempting way, but I could secure no grip and was equally unsuccessful with an elevator. Subsequent general medical treatment was as powerless for good as the operative attempt just mentioned. The pain increased and relief could only be obtained by the almost constant use of chloroform, and in the course of one night no less than three ounces were inhaled. So the pain went on for a fortnight, at the end of which it somewhat subsided. There was considerable thickening of the parts, symptoms of inflammation became apparent, and the mouth could only be opened to a trifling extent. An abscess having formed, pus exuded from the unhealed wound, as also from a minute opening which shewed itself posteriorly. The discharge gradually increased, and as the inflammatory action appeared to be travelling forward, the first molar was extracted, and some days afterwards the second bicusped, to allay inflammation. These teeth had become loosened, and the removal of the first was followed by a discharge of pus through the socket. By this time the patient was terribly reduced, for in addition to the exhaustion caused by the discharge, he became subject to profuse sweatings at night and was unable to take solid food. Strong beef tea and stimulants were employed to keep up the system, and a change of air for a few days, was attended with benefit, as on his return home the general health was better and the pain had ceased, but paralysis of the dental nerve had set in, there being about its extremities an almost total insensibility—so that the right side of the chin could be pinched or punctured with little or no sensation. The disease was, nevertheless going on, and as the bone

was evidently affected, the opinion of an eminent hospital surgeon was taken. He could discover no "tooth substance," but easily detected the existence of diseased bone, and advised an immediate operation for its removal. The patient with, I think, good reason was averse to being operated upon then, as the diseased portion of bone was not all loose.

In April following, a fistulous opening through the cheek took place, which communicated directly with the seat of mischief;—i. e., about the bottom of the socket of the second molar. The discharge from this opening was continuous and excessive. The patient, at this instance consulted another hospital surgeon. He advised patience, in order to see what nature would do for him; at any rate he regarded an operation as premature. In July following, a piece of necrosed bone came away through the opening in the cheek, the exfoliation being about the size of a broad bean.

From this time a great and general improvement took place, and it was hoped that all would be better by and by—but not so, altogether, as the discharge through the opening in the cheek continued in a diminished degree for a year afterwards, at the end of which, the patient called upon me with the desire that I should examine his mouth, as, he said, the splinter of bone substance I had declared at the onset, was working its way through the gum. Upon examination I found, to my surprise, that a *wisdom tooth* was rising, and this was the "tooth substance" I had touched by the probe and which had been imprisoned within the jaw for so long a time, and which had been the cause of so much trouble. The tooth had become fully erupted in September, 1866, occupying nearly the position of the second molar, and as it occasioned no great amount of inconvenience, it was allowed to remain for a time; although the discharge from the cheek continued. From the period just named, September 1866, to the present, June, 1868, the patient has enjoyed pretty good health. The discharge through the cheek has been continuous, without further indication of diseased bone. As his teeth generally had become loose I extracted ten of them, under chloroform, on the 16th instant, the wisdom tooth being included. This tooth is large and the roots necrosed—portions shewing indications of absorption.

The discharge ceased immediately upon its removal, and the mouth generally, presents at this date a healthy appearance. I hope to be enabled to put in a new set of teeth shortly, and have the pleasure of seeing my friend and patient restored to his wonted health and strength.

This case is interesting, I think, as an example of difficulty in diagnosis in affections of the kind, and it calls to mind an observation of Mr. Tomes, namely,—“It is desirable that it should be borne in mind, when

disease about the posterior parts of the jaws is coincident with the absence of the wisdom tooth from the usual situation, that the lost teeth may be buried in the substance of the bone, and be the existing cause of mischief."—A System of Dental Surgery, by John Tomes, F.R.S., pp. 195-6.

Croydon, Surrey, England,  
June 27, 1868.

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## AN ARTIFICIAL PALATE.

BY J. NEELANDS, LINDSAY, ONT.

In the month of July, 1866, H. G., a young man residing about 20 miles distant, called to consult me respecting the possibility of getting an *artificial palate* or *obturator* that would be of service to him. He was accompanied by his sister to interpret for him, as he was so literally dumb that it was impossible to understand anything he said. This was caused by an opening or defect in the upper part of his palate. Upon inquiring into the history of the case, I ascertained that about ten years previous, he had been attacked with a disease in his eyes, which had been treated for a length of time with very powerful medicines. The disease finally located in the region of the palate causing the destruction of a large portion of the superior maxillary bone.

Such was the extent of the disease that an open space was left which extended from the canine tooth of the left superior maxilla to the corresponding place of right superior maxilla and including the nasal spine and processes of the incisive teeth anteriorly and the palate spine and palate bones posteriorly together with the palate process, crista nasalis, part of the vomer, and horizontal plate of the palate bone. A large open space was left which extended laterally nearly an inch and a half, and posteriorly to the velum pendulum palati about two inches.

This case was very distressing to the sufferer as well as to his friends.

He could not articulate a single word; eating and drinking were most painful to him; the food and liquid passing up into his nose. He also presented a most unnatural appearance; the four incisor teeth were gone, and the upper lip and nose very much sunken. He as well as his friends were very anxious that something should be done to alleviate his sufferings.

I saw that the principle difficulty at the outset was to obtain a correct impression owing to the peculiar shape of the parts to be taken. This I succeeded in taking; previous to which I plugged the cavity in the palate with cotton wool.

In this case it being impossible to construct a suction plate I fitted strong gold clasps to several of the teeth which still remained in the jaw, and to these clasps I soldered clingers which were retained in the vulcanite plate. The plate was constructed of rubber and in such a manner as to supply as near as possible the place occupied by the bone which was destroyed, in order to give the lip, nose, &c., their natural appearance. Almost immediately after the plate was inserted, I noticed a decided improvement in his speech; in fact I could understand him without any difficulty. I have not seen the patient since I inserted the palate for him, but some of his friends told me a few days ago that it continues to give him the best of satisfaction.

The following is a short extract of a letter I received from him about nine months after I saw him.

"I am glad to let you know that the artificial palate you made for me answers a great deal better than I expected. I did not think it would have done near so well as it has done; I have not the least trouble with it, I could not do without it."

It affords satisfaction to know that such operations are acknowledged with gratitude by those for whom they are performed, and that our labours are so well appreciated.

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## A CANADIAN DENTAL JOURNAL.

By W. H. ATKINSON, M.D., D.D.S., New York.

Journals, like every separate individual existence, must live upon a pabulum, the preparation of which brings death and destruction to the bodies upon which they feed, in the process requisite to fit them for this appropriation. Therefore, permit me to advise that you avoid the folly of attempting to bring forth a journal of full maturity, and of wisdom, above all that has ever been. For this has been the covert or expressed promise of nearly all the professional periodicals and schools at the time of issuing their prospectuses.

This is to be a Dental Journal. Let it reach far and wide for the material with which to enrich its doctrines and practices resultant upon them. But test, with iconoclastic energy, all the doctrines, old or new, and sweep them, as but stumbling-blocks and rocks of offence, out of the way, if they are not proved and provable. Better, far better is it to have a few central truths around which to rally your forces, than to be overborne, as all professions are now, with false records and false conclusions, accumulated and accumulating to an intolerable burden, as the result of

the blasphemous assumption that "the whole field of the knowable has been long since well explored, understood, and recorded!"

Probably the greatest practical error of the past history of the world is the assumption that the lives of individuals is but the repetition of the lives of their predecessors! when, in the very nature of things, it is plain to every lover of the truth for its own sake that "life is a process from all time to all time;" and hence, no one person or thing can possibly be any other than just what it is in the order of the divine appointment!

Therefore, be persuaded to let the *Canada Journal of Dental Science* be its own fresh, fragrant self, without the pussillanimous attempt to put on airs of age and wisdom unbecoming its strength and years!

As the well-gestated infant comes forth ruddy and plump from the maternal confinements and restraints, so let this child of the profession be born, nourished and educated as becometh the noble stock from which it springs, and the holy mission of disseminating light and dispelling darkness and death, for which it is brought forth! A journal, to be useful, must needs be of ready access, terse and lucid in sense, and free as possible from ambiguity and *double entendre*.

That the greatest benefit may accrue from its publication, the *reader* must not only subscribe and pay for the Journal, but he must read and thoroughly digest its contents, so that he may be able to approve, or intelligently disapprove and overturn, the blunders and fallacies he finds in it.

All work is legitimate or illegitimate—in other words, "work is worship or blasphemy;" that is to say, either coinciding with or opposing the truth, in whatever department of the multifarious works of life we may engage. These aphorisms seem so clear, that arguments in their support would be a work of supererogation.

In view of these qualifications, what is the duty of the dentist of to-day?

Doubtless the primary duty of all who desire the office of a true dentist, is to duly and truly prepare by acquiring the qualifications requisite to meeting the demands of prophylaxis and redemption of the dental system. Prevention is to be secured by obedience to the physiological laws in cases where disease has not yet made its advent. Redemption and substitution are to be secured where these become necessary, because of the malign presence of pathological activities, consequent upon infractions of law through *ignorance*—by the exercise of all that pertains to the operative and mechanical departments of the profession.

That this incubus (*ignorance*) may be dispelled, let mind act upon mind until the attrition shall emit sufficient light and intensity of interest to enable us perceive the whole truth under the guidance of the

blessed host that stands ready to lead us into all the byeways and highways of physiological and pathological manifestations. How shall all this be accomplished? Simply by each one doing with all the might of his utmost strength the work before him, be it arduous or easy; giving as freely as he receives the results of the labors of head, heart, and hand, as his mite of contribution for the general good; through oral or written instructions and demonstration to patient or practitioner, to intimate friend or implacable foe, to pupil of unfledged proportions or to ripest scholar and expert alike, with the burning desire to do good to somebody! And the work will be accomplished in such short space, that we shall marvel that we had not seen it in this wise long ago!

[The above communication was received from Dr. Atkinson, for the first number of the *Journal*, but we reluctantly had to differ it. His writings, however, are always fresh and readable, and the present one is well worthy of perusal.—Ed. C. J. D. S.]

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## HOW TO GET A CORRECT "BITE."

BY W. G. BEERS, MONTREAL.

The ordinary mode of procedure in obtaining the bite for full upper sets,—lower teeth remaining,—is to make the patient close the jaws upon a rim of wax on or off a pattern plate. The difficulty, however, is that the lower teeth and the distance between them and the bare gums are hidden when the teeth go into the wax, and the length, etc., is comparatively guesswork.

We find the following mode invariably satisfactory. After trimming the wax rim as usual, let the patient bite sufficiently to make a slight impression of the points of the teeth, or, if there is one front tooth above the line of the others, of that one tooth alone. Remove the wax from the mouth, and cut out a square block just over where the longest tooth touched, so as to expose the bare gums at the top, and the whole of the longest tooth and the half of each one adjacent. The width apart in every case of the kind has to be regulated by the length of the longest tooth and the natural molars, and the amount of grinding their artificial antagonizers will allow. At the open space made by cutting out the block of wax, you have a sort of loophole through which you can regulate the width apart to a hair's breadth, just as you wish it; and can see whether or not the patient protrudes or sidles the lower jaw in closing. By noting the manner of closing the jaws before the set is in, and the exact point

of the upper gum touched by the longest tooth, any deviation from it in closing on the wax rim is immediately seen at the open space.

After the bite is correct, make the patient retain the jaw in place, and press soft wax into the hole to get the impression of the guiding tooth that was uncovered.

## THE LABORATORY RECORD.

BY W. G. BEERS, MONTREAL.

### NEW WORK.

No.	Date.	Name.	No. of Model.	Base.	Full Upper Set.	Full Lower Set.	Partial.	Kind of Teeth	Regulator	Details.
							No. of Teeth.			
1	Aug. 1	John Jones.....		Vulcanite	1	.....	.....	G		
2	" "	Mrs. Jas. Brown..	5	Gold.....	.....	.....	10	4 p.		
3	" 2	J. Robinson, jr.,	6	Silver....	.....	.....	.....		1	
4	" 3	Mrs. D. Smith.....		Vulcanite	.....	.....	.....			Obturator
5										
6										

### REPAIRS.

No.	Date.	Name.	Base.	Upper, Lower or Partial.	Details.
1	Aug. 1	Mrs. John Jones....	Vulcanite..	Upper ...	1 Right Central Block.
2	" 2	Mrs. A. Brown.....	Gold.....	Lower ...	2 Gum Teeth.
3	" 4	Dr. Robertson.....	Gold.....	Partial...	Replace left 1st Bicuspid; gum.
4	" 6	L. Smith.....	Vulcanite..	Partial...	Solder Clasp.
5					
6					

We have been using for three years, the above method of chronicling the mechanical work done in the Laboratory, and find it well worth the little trouble incurred in keeping it. Any boy assistant can enter it when the work is finished. The amount of work done in corresponding months of years is shown, the number and kinds of sets made, bases and teeth used.

In entering gum or plain teeth, simply use the letters G. & P.

If an antagonist is preserved, it avoids confusion to number it the same as the plaster model from which the die is cast.

The "new work," and "repairs" are at different ends of the book.

## PROCEEDINGS OF DENTAL SOCIETIES.

PROCEEDINGS OF THE DENTAL ASSOCIATION OF  
ONTARIO, AT HAMILTON, COMMENCING JULY  
14th, 1868, AT 7 P.M.

PRESENT:—C. S. Chittenden, L.D.S., Vice-President, in the chair:—

J. O'Donnell, L.D.S., Corresponding Secretary, Peterboro; F. G. Callender, L.D.S., Cobourg; L. A. Bogart, L.D.S., Hamilton; M. E. Snider, Toronto; Charles Kahn, L.D.S., Stratford; J. A. Brown, Port Hope; S. B. Chandler, Newcastle; R. Trotter, L.D.S., Guelph; T. Neelands, Port Hope; J. Bowes, Ingersoll; J. Zimmerman, Zimmerman; J. B. Willmott, L.D.S., Milton; J. H. Bryant, Woodstock; J. C. McCausland, L.D.S., Barrie; J. B. Devlin, Oshawa; Robert Reid, L.D.S., Galt; L. Wells, L.D.S., Simcoe.

1. C. Kahn, Stratford, moved, seconded by J. O'Donnell, Peterboro:—That J. H. Bryant, be requested to Act as Recording Secretary *pro tem.*, until Dr. Scott arrives.—Carried.

J. O'Donnell, read letters from the Managing Directors of the Grand Trunk and Great Western Railway Company's, granting return Tickets at one fare to Dentists attending this session of the Association.

2. J. B. Willmott, Milton, moved, seconded by R. Trotter:—That the Meetings of this Session be held as follows, from 9 a.m. to 12 noon, from 2 p.m. to 5.30 p.m., and from 7½ p.m. to 10 p.m.—Carried.

At 8½ p.m., J. C. McCausland, L.D.S., Barrie; G. L. Elliot, L.D.S., Toronto; G. W. Hale, Toronto; W. C. Adams, L.D.S., Toronto, R. G. Trotter, L.D.S., Toronto; J. S. Scott, M.D., Toronto; and others having arrived, the Association adjourned for half an hour.

### RESUMED AT 9 P.M.

PRESENT:—C. S. Chittenden, Vice-President in the chair.

J. S. Scott, Toronto, Recording Secretary, and thirty-six members. C. S. Chittenden, reported for the Executive Committee.—Report adopted.

F. G. Callender, Cobourg, Treasurer, reported.—Report adopted. Amount received at Toronto, \$18,00; report at Cobourg Session, \$86; report at Toronto, \$112; Making \$216. Paid various orders \$132; leaving a balance in Treasurer's hands of \$84.

J. S. Scott, Recording Secretary, Toronto, read his report.—Adopted.

J. O'Donnell, Recording Secretary, Peterboro, stated that in consequence of not having received the applications in the hands of Dr.

Day, the Commission on credentials would not be able to report for the present. Adjourned to 9 a.m. to-morrow.

July 15th, 1868.

In addition to members present yesterday, were the following:—

L. Clements, L.D.S., Kingston; D. Ward, Belleville; D. F. Hayes, Brockville; D. W. Dalmadge, Mountain View; C. Cartwright, Stratford; Walter Wells, Waterloo.

Also as visitors, Rev. Ormiston, D.D., Hamilton; Mr. McCallum, Superintendent of Schools, Hamilton; Rev. Bridgeman, B. A., Hamilton.

C. S. Chittenden, in the Chair:

J. S. Scott, read the minutes of the last session, which were on motion adopted.

J. B. Willmott, presented the report of the Commission on Auditors, which was adopted. •

A communication from W. George Beers, respecting "The Canada Journal of Dental Science," was read by the Recording Secretary, and on motion of J. B. Willmott, seconded by W. C. Adams, it was referred to the following Committee: Messrs. Stone, Callender, Scott, Chandler, and Bowes.

On motion of J. B. Willmott, seconded by J. Bowes, the time for the Election of Officers was fixed for 2 o'clock this afternoon.

J. O'Donnell, moved, seconded by W. C. Adams:—That the following Incipient Members be raised to Active Members. T. Neelands, R. G. Trotter, L. Wells, and H. McLaren.—Carried.

R. Trotter, Guelph, moved, seconded by M. E. Snider, Toronto: That Messrs. Zimmerman, Calender, Bogart, Scott and the mover be a committee to select subjects for discussion, during this session received. Adjourned.

July 15th, 2 p.m.

C. S. Chittenden, in the chair, J. S. Scott, Recording Secretary.

J. O'Donnell presented the report of Committee on Credentials as follows: "Your Commission recommend for active members the following:

D. Ward, Belleville; D. W. Dalmadge, Mountain View; D. F. Hayes, Brockville.

As Incipient members, J. Neelands, Lindsay; and Walter Wells, Waterloo.—Adopted, on motion of L. Lemon, seconded by J. B. Willmott.

The several parties were elected and signed the Constitution.

Rev. Dr. Ormiston addressed the Association. R. Trotter moved, seconded by D. A. Bogart:—That the cordial thanks of this Association

be extended to Rev. Dr. Ormiston, for his kindness in attending this meeting, and for the very appropriate address just delivered.—Carried.

The Election of Officers being in order, the Recording Secretary called the roll, when 33 active members answered to their names.

The following were elected office bearers for the ensuing year.

President, J. O'Donnell, Peterboro; Vice-President, J. H. Bryant, Woodstock; W. H. Porter, Holland Landing; L. Lemon, St. Catharines; Recording Secretary, J. S. Scott, Toronto; Corresponding Secretary, R. G. Trotter, Toronto; Treasurer, L. Clements, Kingston; Librarian, L. Wells, Simcoe.

J. O'Donnell, in the absence of Dr. Day, the President, read the Annual Address of that officer, which was received with applause and referred to the following Committee Messrs. Scott, Reekie, Trotter, and Bryant.

J. H. Bryant moved, seconded by J. O'Donnell:—That W. C. Adams, C. S. Chittenden and R. Trotter, Guelph, be elected delegates to the American Dental Association.

R. Trotter, Guelph, reported the following subjects from the Committee thereon for discussion:

“Causes of Premature decay of the teeth.”

“Alveolar Abscess.”

“Anæsthetics.”

“Exposed Nerve and Root filling.”

Report Adopted. Adjourned.

#### EVENING SESSION.

Hamilton, 15th July, 1868.

J. O'Donnell, President in the Chair:

J. S. Scott, Recording Secretary. Forty-one members in attendance.

J. H. Bryant, Woodstock, Chairman of Committee on By-Laws, reported. Report adopted.

The following were elected an Executive Committee.

R. Trotter, Guelph; T. Neelands, Port Hope; J. Bowes, Ingersoll; M. E. Snider, Toronto; W. C. Adams, Toronto.

R. Trotter, Chairman Committee on Finance, reported the several accounts correct, and recommended payment of the same.—Report adopted.

J. B. Chandler presented Report of Committee on Mr. Beers' letter as follows:

“That while your Committee would wish the journal every success, they would not recommend this Association to supply it to its Members, but would most cheerfully recommend it to the liberal support of its Members.”—Adopted.

R. Trotter, Guelph, read a paper entitled "The Dental Profession," which was well received, and ordered to be forwarded to the *Canada Journal of Dental Science*, for publication.

J. S. Scott moved, seconded by J. H. Bryant:—That in view of the valuable services rendered to the profession by Mr. W. George Beers, he be elected an Hon. Member of this Association.—Carried.

J. H. Bryant, Woodstock moved, seconded by M. E. Snider, Toronto, that this Association hail with delight the issue of the *Canada Journal of Dental Science*, among the profession of Ontario, and that we hereby pledge our hearty support, both by recommending Dentists to subscribe for it, and to contribute to its columns.—Carried. Adjourned.

The remainder of the proceedings will appear in next No. with Reports of Committees, President's Address, and Mr. Trotter's Paper, entitled the "Dental Profession."

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NOTES FROM THE PROCEEDINGS OF DENTAL SOCIETIES.—(*Maryland State Dental Society, April 30.*)—In the first number of the Journal we gave Dr. Arthur's propositions on Dental Caries. Dr. Volek undertook to refute them; but the result is tantamount to his defeat, as the following report will show.

Dr. Arthur said he had before presented the matter fully to the Association, and had published his views. His little book had been ably and elaborately revised by Professor Noel; and the whole subject had been before the profession for some two years, but he had not become aware of any formal attempt having been made to disprove his views. Dr. Volek said he opposed the removal of the enamel of the teeth because he believed it to be furnished by nature as a protection from attacks of caries. He had taken pains to examine, microscopically, sections of the teeth of a number of animals (although he had not been able to bring his specimens with him), and had found that, in the human teeth, the enamel was thickest in proportion to their size, of any he had examined. He concluded, from this fact, that nature had provided the human teeth with this additional protection to secure them from the attacks of caries to which they were subject. He condemned filing sound teeth for the prevention of caries.

Dr. Arthur replied that the comparative anatomy of the teeth, as referred to by Dr. V., had no bearing upon the subject. If the human teeth were covered with enamel an inch thick, it would not alter the

well-known fact that caries of the teeth does commonly occur at points where the enamel is most perfectly formed. With regard to the removal of caries without filling, for the arrest of this disease, Dr. A. stated that out of 1375 cases of removal of caries, failures had occurred in less than one hundred. In all these cases the enamel had been entirely removed from the affected surfaces.

Dr. A. declared it to be a mistake to suppose he had advocated the indiscriminate filing of sound teeth. The whole gist of the views he has so earnestly advocated is the anticipation of the attack of caries by separation in cases where it is well ascertained that it is certain to occur; and he endeavoured to point out clearly the indications of a certain condition in which this treatment is advisable. Dr. A. did not find any objections had been made to his views worthy of attention. When such were offered, he would hold himself ready to give them his earnest consideration.

Dr. Bean regarded Dr. Arthur's experience and his deductions therefrom as of immense value to the profession and the public. The rule which Dr. A.'s careful observation has established in regard to *the indications which foreshadow the certain decay of all the teeth on their approximal surfaces*, had been eminently verified by his (Dr. B.'s] own practice. The only exception to Dr. A.'s rule which had suggested itself was in the case of young girls who have been in ill health during childhood, but, as is often the case, have acquired excellent health as they matured. In such cases we may find the superior incisors decayed at thirteen; but at sixteen, under improved constitutional conditions, we may find the causes of decay so far removed as to permanently arrest farther attack on the approximal surfaces of the bicuspid and molars. He thought Dr. A.'s exception of one in twenty might possibly provide for these cases. Dr. Bean did not think the enamel so essential for the protection of the teeth from decay or chemical action, as from abrasion by grinding the food, and for this reason the enamel is always thickest on the cusps of the crowns in most animals, and really thinnest on the approximal surfaces, and near the gums where the teeth are most exposed to the agents of decay. The much larger per cent. of lime contained in the enamel, would argue that it would be more readily dissolved by acids. He did not believe that a *smooth polished surface of sound dentine* would be any more liable to attack by chemical agents which cause decay than a similar surface of *enamel* under the same conditions. Decay is sometimes produced, and is often augmented by vitiated secretions from the stomach, and from a diseased mucous membrane, but never from saliva itself; which is really the alkaline corrective provided by

nature for these conditions. The almost universal agents of decay were most certainly those organic acids manufactured from the food and buccal secretions, by the various kinds of fermentation carried on in the mouth. In the localities indicated by Dr. Arthur, between the teeth when in contact, and in cavities and crevices where these matters are protected from lavement by the saliva and the abrasion of mastication, all the elements for producing these various fermentations are abundant. In these undisturbed laboratories are produced successively renewed portions of *acetic*, *lactic*, and *butyric* acids, which combine with the lime of the enamel and dentine, and at the same time continually enlarge the capacity of these localities for a continuously increasing supply of these corrosive agents.—*Amer. Jour. Dental Science*.

AMERICAN DENTAL CONVENTION NEW YORK, JUNE, 1868.—J. A. McClelland of Louisville, Ky., patentee of the "Rose Pearl" (collodion) base, presented the merits of his patent. He claims that it is twice as strong as vulcanite, withstands the action of acids, and may be nicely adapted to the mouth. Plain teeth are employed, as the color of the base is a near approximation to that of the natural gums.

Dr. Atkinson spoke in favor of the collodion base. He was wearing a partial plate in his own mouth, with which he was greatly pleased, and he believed it would eventually supersede all other materials for fractional cases.

Dr. B. W. Franklin highly commended the collodion base.

A number of solders for aluminum were presented.

A. P. Preterre said that chemically pure zinc made a very good solder for aluminum, and one that is not easily affected by acids. A solder composed of pure zinc 90 parts, and aluminum 6 parts, is not affected by sulphuret of potassa, and hence does not blacken in the mouth.

A. Starr shewed a specimen of aluminum base soldered with an alloy composed of allumina seven-eighths, and tin one-eighth.

Dr. Atkinson advocated the preservation of dental pulps. He is able to save them, even when suppuration has commenced. He dries the cavity perfectly, applies creasote, and then a little oxychloride of zinc, of a creamy consistence, which is adapted as a cap over the pulp by gently tapping it while soft. In a moment this sets sufficiently to permit the addition of the balance of the oxychloride. This temporary filling may remain some weeks or months, the major portion then cut out and the cavity filled permanently. Should the pulp be inflamed and

painful on presentation, or during examination and removal of the softened dentine over it, he quiets it with creasote, chloroform, or other remedy, before inserting the cap and temporary filling. Does not remove the temporary filling, because pain recommences in the tooth after its insertion. Timidity and want of faith in the method may cause some to remove the oxychloride and apply arsenious acid, but this is entirely unnecessary.

C. E. Latimer had tried Dr. A.'s method, but sometimes found severe pain to follow the application, and has felt constrained to remove the oxychloride and apply arsenious acid. He believed that very nice manipulation is necessary to success, and that general directions are insufficient. He did not wish his patients to consider it more than a dressing.

C. S. Weeks said he had employed the creasote and oxychloride of zinc generally with success, even after wounding the pulps; but in a few cases the pain continued so long, that he had devitalized and removed the pulp.

In reply to an interrogatory concerning the treatment of alveolar abscess, the President observed that it would generally be found best to penetrate the alveolus with an instrument, thus forming an artificial fistula. The medication may then be made into the tooth and into the fistula.

Dr. Atkinson remarked that it was important that the perforation of the gum and alveolus should be in such a position and direction as to drain the pus away from about the neck of the tooth, for at that portion should be the pocket for the retention of the formative plasma.

SOCIETY OF DENTAL SURGEONS OF THE CITY OF NEW YORK.—  
“*Treatment of Exposed Pulps.*”—Dr. Atkinson stated, as his own most decided conviction, that nine-tenths of exposed pulps, when not inflamed, are capable of being restored to health, and also that 50 per cent. of those exposed and suppurating are amenable to a like result.

My own knowledge of the value of hydrochlorate of zinc, and of the oxychlorate of zinc, had its origin outside of regular scientific expectancy and deduction; for I had supposed that death would result to the pulp were it directly applied to its exposed surface.

The remarkable affinity by which the hydrochlor-zincate of albumen is produced, has only been known to me by the results of irregular experimentation in many hands, beginning in 1856, not culminating until early in 1867, and still, as I believe, but in the infancy of its munificence. The distinguishing trait of the hydrochlorate of zinc is that it is its own limitation and antidote, by reason of the ontological and organological law

referred to above, in the conversion of the living structure into chaos or a magma out of which to produce a barrier of protection and shield to the delicate pulp, out of which a new calcigerous wall is ultimately prepared completely answering the purposes of normal secondary dentine. This process of chaotification is indeed a great marvel, not only by what it does, but by the manner in which it acts. It is an astringent, and mechanically closes the capillaries by its biological force, driving the blood completely out of the vessels, beyond the limit of its combining power, thus reducing the connective tissue of the nerves, vessels, and whole pulp (so far as it goes) into a colloid mass, ready for transformation, without the possibility of the formation in the pulp territory of one globule of pus.

To make all things sure, in all cases of exposed or nearly exposed pulps, fully saturate with pure creosote previous to the introduction of the oxychloride of zinc. I have been led strongly to suspect that a reopening to a certain extent of the blood-vessels, contracted by the mere proximity without combination of the zinc, takes place in the pulp, favoring the process of calcification. My reasons for so thinking are the peculiar results witnessed in cases where the colloid mass was so thick as to entirely obscure the pulp redness at first; that afterwards, on the removal of the temporary stopping, presented a ring of secondary dentine around the margins of exposure, with a mere pin-hole in the centre, through which the red pulsating pulp was brilliantly displayed.

Dr. J. S. Latimer said that Dr. D. L. Dodson, of Williamsport, Pa, used the spray of rhigolene for obtunding the sensibility. He prevented the congelation in the tubes by keeping the bottle as cool as possible, adjusting the flow of the fluid through the lower portion of the tube. The pain of freezing is but slight, and patients came from far to Williamsport to get the benefit of his process. Dr. L. stated that the congelation was frequently caused in the tubes by grasping the bottle with the warm hand. The rhigolene should be applied to the gum first, gradually bringing it on the tooth. The sensibility being obtunded, the assistant occasionally puts the jet on, and in this way it is continued for excavations.

## EDITORIAL.

## THE CONVENTION AT HAMILTON.

We have received letters commenting in no very æsthetical phraseology upon the recent elections of the Association in Hamilton, and severely censuring the meeting for the unprofitable discussions on matters of no practical moment. Happily, the Journal occupies a position of perfect neutrality, and so long as we control its destiny, will never lend itself to *the abuse* of any one. It has no sympathy with ill-tempered correspondents who would fain keep alive old disputes, and whose one ambition seems to be to get themselves into power, or abuse others who are preferred. The mission of this Journal is to conciliate, not to embitter; to harmonize, elevate and improve, not to criticize and traduce. If events have rubbed against the grain of any one's private interests or opinions, we have nothing to do with them, and until we can see how such communications as those sent us tend to the elevation and improvement of the profession, we must positively refuse their insertion. There can scarcely be an election without a consequent disappointment in some quarter; but the choice of the majority must be accepted with good grace, or no organization can be successful. However much we think of the claims of our candidate, our co-operation should not fluctuate by their success or defeat; and as "office" never yet added one whit to a man's personal ability, the loss of it is by no means serious. Nothing is more uncourteous than to chuckle over victory, nothing more foolish than to carp at defeat. If you have won, aim to win the respect and support of those who opposed you; if you have lost, prove by your undiminished co-operation, that "office" was not the price of your suffrage. A consciousness that we labor for the good of the profession, not for our own selfish ends, not only dignifies the Association and the profession, but above all, the individual members who practice this principle. We trust, then, that every member of the Association will accept the position, and not allow any trifle to come between them and true progress.

It is a matter of considerable surprise and sincere regret that the meetings at Hamilton were not productive of more practical discussion. A great deal of time seems to have been spent in petty personal debate of no value to the profession at large; and some disposition to cliquism allowed to intrude. The weakness of such organizations is in just such useless debate, while their principal object of practical work, and which no doubt has more attractions for the large majority present, is too often made of secondary consideration.

One word as to fault finding. We cannot expect absolute perfection in any department of the associative work, especially if some men do all they can to stultify good intentions. Mistakes are possible, differences of opinion are to be found in every free body, but these should be kept subservient to the one end of progress. Let bygones be bygones; give the right hand of fellowship; settle private differences outside of the Association, and let every action be governed by the golden rule of doing unto others as we would be done by.

We especially intend these remarks for the authors of the several letters sent us, and any inclined to the same method of resentment, as we believe that nothing will sooner destroy the worthy work of the Association than keeping alive antagonism of any kind.

W. G. B.

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### DENTAL INSTRUCTION.

At the late Meeting of the Board of Trustees of the Dental College, held in Toronto, Mr. Relyea stated that the professors of the medical schools in the city had expressed a willingness to assist, in any way, in affording the instruction required upon the Medical portion of the Dental Course.

H. T. Wood, moved, seconded by Charles Kahn:—That Messrs. Day Relyea, Elliot, O'Donnell, Scott, and Chittenden, be a Committee to arrange with the Professors of the Medical Schools, and others, to afford instruction in Dentistry; no arrangement to involve this Board financially."

The Committee are proceeding with their arrangements. Dentists preparing for the examinations in January, will probably be able to receive any assistance they may require. After the Committee have completed their arrangements they will submit their plan to the members of the Board individually. On receipt of replies the announcement will be sent to the profession without further delay.

With the exception of Dr. Day, who was obliged to return home hastily on account of illness in his family; C. S. Chittenden, whose illness prevented his attendance; and J. B. Meacham not in attendance, the members of the Board already understand the plan proposed. It is intended that preliminary instruction shall commence on the fifteenth of September, and the regular course on the first of October.

J. S. S.

## THE AMERICAN DENTAL ASSOCIATION.

By invitation, Messrs. G. V. N. Relyea, of Belleville; L. Lemon, of St. Catherines, and the writer, attended the late session of the above Association at Niagara Falls. We were kindly received and welcomed to all the privileges of the session, except voting. An impression prevailed that we were there as delegates seeking admission as representatives of the Dental Association of Ontario. This was not the case, so far as we were concerned. The President of our Association, J. O'Donnell, of Peterboro, having attended a session at Chicago a few years since, we were fully aware of the nature of the constitution of the American Dental Association.

The Dental Association of Ontario, however, elected delegates; Mr. W. C. Adams, of Toronto, attended in that capacity. It is quite evident that the American Dental Association wish to extend to us the hand of fellowship. No Canadian Dentist of respectable standing need suppose for a moment that his presence among them is not desired. On the other hand, he will be received and made welcome in *true American style*. It is natural that a few American Dentists show an independent hand towards their northern neighbours, and "*talk of annexing them some morning*." Despite all this, it is pleasant and profitable to meet the men whose names are household words in every country where Dentistry is known and appreciated. The associations of 1776 are too remote to affect us, as Canadians, prejudicially towards our American neighbours, and we hope that inter-communication will soon wear off any feeling that may exist among our esteemed friends, to the effect that we are disposed to legislate with a view to keeping American Dentists from practising here. On the contrary, our Act protects their Dental Colleges in the use of their title of D.D.S.

Previous to the passing of our bill, the use of the Degree of the American Colleges was assumed by many unqualified itinerant empirics, and was brought into disrepute to that extent, that respectable operators would consider it a disgrace to use it. This is, perhaps, one reason that so many of our Dentists have taken a part or the whole of the Medical course, and that so few have availed themselves of the superior advantages of the American Dental Colleges. It is true that Dentists from any country must show their good faith towards the profession here, by becoming subjects of Canada before they can obtain a license; the same is required in law and medicine. But there is no difficulty in those professions on that account. There is nothing to prevent any American Dentist becoming a partner or assistant, during the two years he will

require to reside here before he can obtain license. There are many eminent American Dentists practising in Canada, who are a credit to themselves and the profession. In fact, we look upon American Dentists as a sort of an *Alma Mater* to the profession all over the world. As a proof that our doors are not closed to worthy eminent Americans, it is only necessary to allude to the fact that the Lieutenant Governor of Ontario is an *American*; *Canadian* only by naturalization.

Having taken copious notes, we intend to refer to the transactions of the Association in a future number of the Journal.

J. S. S.

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“THE OLD COUNTRY.”—The *Canada Journal of Dental Science* has found good friends in England, who have interested themselves in its success. Besides the valued contributions from Mr. WAITE, whose writings are well known on this side of the Atlantic, we have much pleasure in giving in the present number one from Mr. S. LEE RYMER, Vice-President of the Odontological Society of Great Britain. We have recently received letters from Mr. EDWIN SAUNDERS, and by proxy from Mr. JOHN TOMES, author of *Tomes' Dental Surgery*, etc., expressing their deep interest in the Canadian periodical. There is every reason to hope that if the profession in Canada show a determination to sustain their own Dental Journal, the leading members of our profession in “the old country” will often enrich it with their contributions. Let us make our first and only Canadian dental periodical worthy of such interest.

We are reluctantly compelled to lay over several contributions, but hope to give their insertion in the next number.

We will publish the list of paid subscribers in the next and ensuing numbers; and would again impress upon our friends the necessity of *payment in advance*. Those who subscribed, and who have not yet paid, are two months in arrears.

The original intention was to issue the Journal on the 15th of every month; but we will endeavour in future to have it out earlier.

DENTAL ASSOCIATION OF ONTARIO.—We are deeply sensible of the honour done us by the Association in electing us an honorary member, though we wish to give the *Journal* the merit. We esteem it a privilege to be connected in any way with the Dental Association of Ontario, and only trust that we may now, by virtue of the affiliation, the more emphatically claim sympathy and support from the profession of Ontario, in the effort to establish a Dental Journal in Canada.

W. G. B.

*Dr. Day's Nitrate of Ammonia.*—Dr. Day is devoting much attention to the manufacture of pure nitrate of Ammonia, and will soon be able to supply any quantity. We are informed by a reliable party who has tested both the home and the imported article, that a given quantity of Dr. Day's yields more gas than the same quantity of the other, and that it does not produce that livid appearance of the lips, which is due to carbonic acid in the oxide.

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#### PRESENTATION TO PROF. C. V. BERRYMAN, M.A., M.D.

A handsome silver *Epergne* was presented to Dr. Berryman, on the 22nd of last month, at the office of Dr. Scott, Toronto, by Dr. Potts, of Belleville, Dr. Dean, of Keeno, and Dr. J. S. Scott. As Professor Berryman had assisted in procuring the Dental Act, a number of Dentists were invited.

The chair was occupied by G. V. N. Relyea, Belleville, and the vice chair by Ogle R. Buchanan, M.P., Toronto.

Dr. Scott read the following address:—

To Professor, C. V. Berryman, M.A., M.D.

"It affords me pleasure to present you with this mark of our appreciation of your services cheerfully rendered, and directed towards the elevation of the Profession of Medicine.

In presenting this record of our esteem, I can speak for Dr. Potts and Dr. Dean, in saying no slight is intended towards other worthy instructors.

We only wish to make a grateful acknowledgement for the many valuable services received from yourself, personally.

When you were perplexed with the importunities of the largest gathering that ever assembled to listen to the instructions of yourself and your associates, your gentlemanly nature, though often nearly worn out, was ever ready to give explanations, and to assist, in any legitimate way, the worthy student in the prosecution of his studies to a successful termination. For these services please accept our most grateful acknowledgements.

In your efforts you did not forget the humble branch of Medicine, recognized in England and other countries as a separate profession, having for its sphere the care of the organs of mastication.

To yourself, sir, and other medical gentlemen, the Dentists of Ontario are indebted for their first recognition. You proposed the first resolution in the Medical Council approving of our course, in applying for an act to regulate the practice of Dentistry. It is on this account, sir, that you are surrounded by the representatives of that profession in this province.

When our bill was wavering between success and failure, before the

Legislature, you lent your valuable aid in helping us to secure the Act under which we are recognized.

Only a beginning has been made. A demand exists for Dental Instruction which can but be afforded by amalgamating with medical schools. The Dental Profession look with confidence to the men who have assisted them thus far, for a continuance of that support.

In Dentistry as in Medicine we are surrounded by quacks. It will require the united efforts of regular physicians (and if you will allow me the expression) of regular dentists to keep the unprincipled from un-posing upon an unsuspecting public. The interests of Regular Medicine and of the established practitioners of Dentistry are one. Now that registration is shaking off the impostors in medicine, they are looking to dentistry for support.

It is a matter of congratulation that our Dental Act, if faithfully carried out, will effectually prevent quacks in medicine from practising under the, to them, assumed name of Dentist.

In our efforts to elevate Dentistry above the mere trade or calling, by establishing a proper course of studies for students, we expect, judging from the past, to receive the benefit of your valuable assistance.

Wishing yourself Mrs. Berryman, and the younger members of the family, long life, prosperity and happiness, on the part of the presenters, we remain, your ever grateful pupils."

Professor Berryman responded, thanking the donors for the handsome present.

After the usual loyal toasts, the toasts of "The Medical Profession," "Royal College of Dental Surgeons," "The Licentiates of Dental Surgery," "The Dental Profession," "The Legal Profession," "The Press," "Our Host and Hostess," "Prof. Berryman," "The Candidates," "The Chairman," &c., were severally proposed and responded to, and the evening passed away pleasantly and too soon.

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#### REVIEW.

*Dental Materia Medica*, 108 pp. By Jas. W. White. Published by S. S. White, Philadelphia, 1868.

We have received a copy of the above small work from the publishers, and have much pleasure in recommending it to the attention of the Canadian profession: Its object is to give plain practical information as to the "properties, dental uses, and methods of applying the various medicinal agents and preparations" used in dental medicine. It is well worth a careful study; not to make smatterers in *Dental Materia Medica*, but to open a neglected field of research, and lead on to deeper and more scientific investigation.

SELECTED ARTICLES.

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THE NEW ANÆSTHETIC? — NITROUS OXIDE.—A very opportune discussion took place at the Medical Society of London, on Monday night last, on the so-called Anæsthetic, Nitrous Oxide Gas. A question on the subject addressed to the President, Dr. Richardson, whose authority on such a point cannot be questioned, drew from him a clear and careful summary of its action. It was painful, he remarked, to see the childish excitement with which nitrous oxide and its effects had recently been dwelt on. The gas had been treated as an unknown, wonderful and perfectly harmless agent; whereas, in simple fact, it was one of the best known, least wonderful, and most dangerous of all the substances that had been applied for the production of general anæsthesia. No substance had been physiologically studied with greater scientific zeal or more rigid accuracy; and no substance had been more deservedly given up as unfit and unsafe for use. It had caused death in the human subject, and on animals it was so fatal that with the utmost delicacy in its use, it was a critical task thoroughly to narcotize an animal with the gas without actually destroying life. In some cases, also, animals died after recovering from the insensibility.

Respecting the modes of action of the nitrous oxide, Dr. Richardson explained that it was not, in the true sense, the agent that caused the insensibility. It acted indirectly, and the immediate stupefier was really carbonic acid. In fact, nitrous oxide is an asphyxiating agent. There are two explanations of this. It may be that the nitrous oxide quickens the oxidation of blood, and so causes accumulation of carbonic acid in the blood; or it may be—and this is most probable—that it acts by checking the outward diffusion of carbonic acid. The vapor density of nitrous oxide and of carbonic acid is the same—namely, 22, taking hydrogen as unity; and as diffusion of gases into the blood and out of it, is governed by the same laws as in ordinary diffusion, to make an animal breathe nitrous oxide is virtually equivalent to making it breathe carbonic acid itself, the diffusion of carbonic being so determinately impeded. The living phenomena were also in character; the arterial blood was rendered venous by nitrous oxide; the animal temperature fell; the skin became livid. And although these symptoms might be induced many times without actually destroying life, they could not be sustained for any length of time without certain disaster. Dr. Sansom followed in nearly the same strain.

In speaking out thus boldly to a professional audience, Dr. Richardson has not spoken a moment too soon. The *ad captandum* method of applying the most potent medicinal agents against the teachings of scientific experiment and the experience of accepted observers, is a phrase in physic which requires to be put down with a strong hand. Administration of nitrous oxide, or laughing-gas as it is commonly called, is becoming a pastime for amateurs. We hope these few and timely words will prevent a catastrophe. If they fail, the fault or neglect will not rest with us.—*Lancet*.

[Only two deaths have occurred in America during the use of nitrous oxide. The lungs of one patient were covered with tubercles, and the other death was caused by swallowing the cork held between the teeth. The tone of Dr. R's address seems unreasonably severe. Ed. C. J. D. S.]

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### LOCAL ANÆSTHESIA.

The danger attending the inhalation of the vapors of anæsthetic agents led to the introduction of what are known as local anæsthetics. Various means have been tried, among them the application of the electro-galvanic current; one pole of the battery being attached to the forceps, and a connection with the other held in the hand of the patient.

Various local applications upon the tooth and surrounding gum have also been tried for the purpose of obtunding sensibility previous to extraction. For this purpose equal parts of chloroform and tincture of aconite root have been recommended; but as this last is a very dangerous agent it must be used with great care. By some practitioners a solution of camphor in ether is highly spoken of.

The following method of using chloroform or ether to obtain partial insensibility during extraction of teeth, has been tried, it is asserted, with success. The plan is to drop on the vortex from 10 to 30 drops of ether of these agents, covering immediately with a folded napkin or handkerchief; an athæsthetic effect is produced, during which the tooth can be extracted. Should the application cause a painful sense of heat, the cloth can be partially or wholly removed.

More recently, the method invented by Dr. Benj. W. Richardson, of London has come into general use. The process consists in directing on a given surface of the body, such as a tooth and the surrounding gum, a volatile liquid in minute subdivision or spray.

The apparatus consists of a bottle to contain the ether or other fluid to be used; through a perforated cork a double tube is passed, one extremity of the inner part of which goes to the bottom of the bottle; above the

cork, a tube connected with the bellows, pierces the outer part of the double tube, and communicates by a small aperture at the inner end of the cork with the interior of the bottle. The inner tube for delivering the ether runs upward to the extremity of the outer tube.

When the bellows are worked, *a double current of air is produced*; one current descending and pressing upon the ether, forcing it along the inner tube, and the other ascending through the outer tube and playing upon the columns of ether as it passes from the inner tube.

In operating for teeth extraction, most operators throw the spray first on the gum and then upon the tooth and gum. Others cover the gum and other teeth with a non-conductor and throw the spray directly upon the tooth to be removed, taking the precaution to cover the nerve, if exposed, with wax or cotton. By this method some pain will be experienced during the first seconds of application, but it will speedily pass away, and when the gum becomes white, which should be in from ten to fifteen seconds after the first application of the spray, the tooth may be removed.

To obtund sensitive dentine, throw the spray directly into the carious cavity, taking the precaution to cover that portion of the tissue over the pulp with some non-conducting material. Some operators fill the cavity with cotton and direct the spray upon that. The benumbing effect being only temporary, an occasional repetition of the spray will be required until the excavation is completed.

The spray has also been used with success in the treatment of periodontitis, thrown upon the affected tooth and surrounding gum. It is not considered necessary to carry the freezing process to the extent required for extracting teeth, but the application should be longer continued.

It has also been successfully applied to check undue hemorrhage following extraction, and as a means of affording at least temporary relief in severe local pain, especially in cases of neuralgia.

To obviate the disadvantages of local anæsthesia applied to operations in the mouth, the attempt has been made with considerable success, to produce the anæsthesia required by the application of the spray along the course of the trifacial nerve outside of the mouth.

For use in this manner, some prefer concentrated ether, others consider rhigolene as more sure and more easily controlled, and some advise a mixture of the two in equal parts,

The concentrated ether is the officinal *Æther Fortior*; but for this purpose it should be very carefully freed from alcohol and water, which interferes with the success of the process.

Rhigolene is one of the most volatile products obtained by the distillation of petroleum. It is one of the lightest of all known liquids, its specific gravity being 0.625. It boils at 70° F.

Local anæsthesia by cold, produced in this manner, has been used with great advantage in minor surgery; but if too long protracted, or over too large a surface, serious results may ensue.

Rhigolene is highly esteemed as a topical application in periodontitis. It is applied on cotton to the gum after free scarification,—it is extremely volatile rendering frequent renewal necessary.

Rhigolene and ether being extremely volatile and highly inflammable, should be kept securely corked and in a cool place, and not opened or used near a flame.—*Dental Materia Medica*: by J. W. WHITE.

## A NEW METHOD FOR CONSTRUCTING ATMOSPHERIC PLATES.

BY N. T. FOLSOM, Boston.

I have a method of constructing the atmospheric plates of artificial teeth so that they will not move from their places in the mouth while eating or speaking, neither will food get under them, however difficult the mouth. I will describe it: First take an impression in wax and trim off the surplus, then press out the wax that comes against the labial surface of the dental ridge, to give room for the plaster, after which cool the wax. I now have a cup suited to the case, with which I take the impression in plaster, mixed with a solution of sulphate of potassa (Dr. Chamberlin's rule is  $\frac{1}{2}$  oz. to 1 qt. water,) varnish with ethereal varnish, mix the plaster for making the model the same as for the impression (with the solution of potassa,) and then dip the impression in water and immediately pour the plaster. The next step is to examine the mouth to ascertain where the edge of the plate will extend; then mark that line on the model. Examine the mouth again to ascertain the yielding nature of the parts of this same line, note the hard and soft places, and then with a suitable instrument cut a groove in the plaster model along the entire line of the edge of the plate, one-twentieth of an inch wide, and varying in depth from one-sixteenth to one-sixtieth of an inch. As a general rule I commence cutting the groove in the rear of the tuberosity on the right side of the mouth. At this point I cut it deep, then shallow until I reach the soft part at the side of the back of the mouth, which I cut deeper than any other point, then shallow again till I reach the corresponding point on the opposite side.

From the rear of the tuberosities to the canine teeth, I cut it comparatively shallow. I endeavor to cut a well defined groove around in front from canine to canine, quite deep. A plate made on this cast if not

injured in vulcanizing or otherwise, will fit not only the mouth, so that atmospheric pressure is obtained, but as a packing ridge encircling it, which prevents ingress of air, under it, and thereby secures the pressure on the outside. I make the ridge as high all round the plate as is possible taking care that it does not pinch the flesh on the bone; as it is not necessary to have it hurt at all to secure the plate firmly.

In finishing the plate I do not reduce the ridge in width or height, or break its continuity. When ready to put in, I let the patient carry it to its place and after wearing it ten or fifteen minutes, if the ridge is hurting in any place, I reduce it at the point indicated, by scraping it a little until the plate sets easily. There are points along the edge of the plate where the under surface would need reducing, if no ridge was present; I reduce it and the ridge correspondingly. If after the plate has been worn a day or two, some points are bearing too hard, I reduce the ridge at those points. I had much rather have a patient come in and say that the plate is firmly fixed in the mouth, but is hurting at some point, than to have them say they can do nothing with them, because in the first case I can correct it, but in the last I have trouble. The reason why a plate made in this way is so firmly secured, is well set forth by Dr. Davis of New Bedford, when he says there is a movement of the plate attending mastication, and the least lifting admits the air and down comes the plate, whereas the packing ridge allows of this movement without admitting the air.

*Amer. Journ. Dental Science.*

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## MISCELLANEOUS.

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**BDELLATOMY. TAKING ADVANTAGE OF A LEECH.**—A curious practice lately introduced in Germany is the cutting of the leech so that the blood will flow out of his body as fast as he sucks it from the patient. An ounce, or even two ounces, may be drawn in this way by a single leech. The spring lancet is preferred, though a thumb lancet will answer. The incision is made in the side, the left side being preferable, and at the time when the leech has nearly filled himself, and just before he is ready to stop sucking. The wound is kept free from coagulated blood by a warm sponge, or even by injecting warm water into the wound. If from rough handling the leech falls off, it takes hold again without difficulty. The process has been named *Bdellatomy* (*bdella*, a leech).

At first sight it looks like taking an unfair advantage of the animal, if not treating him cruelly. But it is probably just the reverse, as it affords him an opportunity to feast longer on his rich beverage without giving any noticeable pain. If carefully kept in clean water the same leech may be repeatedly applied, and incised at intervals of days or weeks.

**GOLD FOIL.**—An important item in preparing the foil for filling is to avoid contact with the fingers; to do this, with heavy shears cut the book of foil into two or three parts, then with the pliers lift off the successive leaves of paper and foil, place the latter upon a napkin or piece of linen, a piece of well worn table linen is perhaps the best; this should be folded into a strip about four inches wide and eighteen inches long, having six to eight thicknesses; lay the foil upon this strip, then take in the hand the distant end of the cloth and bring it over upon the foil, and, by an adroit backward movement, the foil will be made into a uniformly dense and beautiful roll, any desired density being attainable in a moment. The roll is then taken up with the pliers, and passed through the flame if thought best, but we scarcely regard it necessary, and cut into pieces of the proper size.—*Dent. Register.*

**A CASE OF SUNSTROKE.**—The *St. Catherine's Journal* says: A few days ago, during the hot term, Mr. Peter Fowler was prostrated by an attack of sunstroke. Singular to say his gums commenced bleeding at the eye teeth, and bled profusely for about three hours. Becoming alarmed at the hæmorrhage, he consulted a physician, and was informed that the bleeding probably saved his life, although a similar case had never before come under his immediate observation.

**DENTISTRY, A.D. 1612.**—"Common Barbor Chyrurgions doe commit great errour in plucking out of innumerable teeth which might well serve—and too much curiositie in rubbing the gummes, and taking away the flesh at the roote of the teeth—is a frequent cause of toothache." [Peter Lowe's "Chyrurgie," 4to. p. 189, A. D. 1612.]

**EQUINE DENTAL HYGIENE.**—An elderly lady in the upper Province owns a magnificent span of horses, and one of her daily recreations is to go out into the stable and polish their teeth with an old nail-brush. The horses rather enjoy it, and the old lady is proud of their ivories.

**EFFECT OF ALCOHOLIC STIMULANTS UPON THE ACTION OF ANÆSTHETIC AGENTS.**—*The Amer. Jour. Dental Science* says that the anæsthetic condition is brought on more rapidly in the use of all general anæsthetics if the patient is in a state of partial intoxication, and suggests the administration of a small quantity of brandy or whisky pre-

vious to inhalation. The effect of such stimulants upon persons of very nervous temperaments, was favorable, and in no case was nausea produced.

Dr. Riley, in the *Pacific Med. and Surg. Journal*, says he has found the stimulating effect of liquor prevents nausea and vomiting in administering chloroform, and ensures the more rapid awakening of the patient.

**DEATH FROM CHLOROFORM.**—An apparently healthy woman, aged 35 years, died from the administration of chloroform last April, in Oneida, Ill. She had taken it six months previously without any bad effect. Two drachms upon a sponge were given on this occasion, with evident judgment. An autopsy could not be obtained.

*The Grand River (Michigan) Eagle*, which has evidently cut its eye-teeth, gets off the following in relation to the marriage of a dentist:

The deed is done! How Cupid's forceps draw!  
 Not one poor fang—but a whole life of jaw!  
 No more shall molars and incisors gleam  
 With ghastly horror through his lonely dream;  
 Or brooding nightmare sleep's pure joys eclipse,  
 With rows of blood-stained, pain-distorted lips;  
 But pouting beauty teach his heart to feel  
 Where kisses revel is no place for steel.

Should the mouth napkin adhere to the mucous membrane of the gums and cheek, inject water on the cloth before attempting to remove it.—*Cosmos*.

There are over forty Dental Societies in the United States.

In 1853, a Prussian dentist published a work on the cure of tooth-ache by *smelling*.

**Lancing Children's Gums.**—Dr. F. H. Thomson, believing that the irritation of teething is caused by the engorgement of vessels supplying the circulation, advises the practitioner to cut low down, at the reflected junction between the lip and the gum, instead of upon the summit of the gum itself.—*Med. Record*.

**DEVITALIZING PULPS.**—PROF. TAFT: Dear Sir,—In one of your lectures, session before last, you stated that you occasionally found a nerve of a tooth whose vitality was not overcome even by repeated applications of arsenious acid. Having noticed the same thing, before and since, myself, I was led to give some attention to the reason of it.

From my investigations, I have come to the following conclusions: All freshly exposed and abraded pulps, having the mouths of the capillaries opened, whereby the arsenious acid is taken directly in (or if, as some

contend, that it is not taken into the circulation) it acts dynamically by being brought into sensible contact with the vital part, and the life is thereby destroyed. Whereas, pulps that have been exposed for a long time, the reparative process is established, which produces a granular surface, exuding new cells, serum or pus, and it may be elaborating ossific matter (secondary dentine). Now these form a barrier to the applied devitalizer. Instead of it being taken up or absorbed into the pulp, it is excluded or thrown away from the vital part by this continual exudation. This also prevents catalytic action, because the devitalizer is at a sensible distance from the vital part, and is kept so by the barrier before alluded to.

Consequently, no injury is done to the vitality of the pulp by the application of arsenious acid when this condition of the pulp exists.

Some one may ask, why is it that arsenious acid will devitalize a pulp through a wall of dentine of considerable thickness? The reason is obvious, there are hundreds of nerve fibrils passing through the dentine.

Now, if arsenious acid is placed in contact with the exposed ends of these nerve fibrils, in the cavity of decay, and they are in a condition to receive the devitalizing effect of the acid, it will be conveyed to the pulp, and death to it will ensue.

Now, if these conclusions are correct, what must be done to a pulp that refuses to give up its vitality? The answer is, remove the granular surface down to the vital part, and apply the devitalizer in the usual way. Very respectfully, M. McCARTY.—*Dental Register*.

MORPHIA IN SENSITIVE DENTINE.—*By James S. Snow, Madison, Florida.*—In the April number of the *Dental Cosmos*, Dr. Mowbray, of Warsaw, Ill., in descanting on the use of morphia as a remedy for sensitive dentine, recommends the use of it internally instead of applying it to the cavity to be operated on. While I agree with the doctor that (with the majority of patients) his plan will put us on the "safe side," so far as to obtain the desired end, I beg leave to differ with him as to the use of the remedy as indicated by him; and we are led to the inference by his statement that—his experience has been far more happy than that of any one else—he makes no exceptions to the use of the remedy in the manner indicated, but states that he "has no difficulty in filling sensitive cavities, and as many of them as circumstances may indicate."

Does he never meet with cases where the administration of morphia in doses of one-tenth to one-fourth of a grain, *internally*, will not obtund sensitiveness of the tooth? when, instead of having this effect, it makes

the patient much more sensible to pain? where even one-tenth of a grain shocks the system to such an extent as to entirely suspend digestion for over twenty-four hours? Let me cite a couple of instances in my limited experience.

*November, 1867.*—I was so unfortunate as to be compelled to destroy the nerve of one of my own teeth—not to allay sensitive dentine. I applied morphia and arsenic for this purpose, when the pain became so intense, that to obtain relief I took one-eighth of a grain of morphia; the consequence was, that in getting rid of one trouble I got into another, and was totally unfit for any business for over thirty-six hours.

*April, 1868.*—Called on to fill a tooth for Mrs. W. In excavating, exposed nerve; applied morphia and arsenic to destroy the nerve; in a few minutes pain became very severe; proposed to administer morphia; patient objected, on the ground of unpleasant effects. I then applied ten drops solution of morphia under the skin with syringe, inserting it a little behind the ear; it took effect in ten minutes—but not such as was hoped for; the patient got no relief from the pain, and was rendered so nervous and sensitive as not to be able to rest till the effect of the morphia had entirely subsided; nor did the pain abate for over twelve hours—the morphia and arsenic remaining in the tooth forty-eight hours.

How will Dr. M. treat such cases as these, where the patients cannot take morphia without such unpleasant consequences?

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ORIGINAL COMMUNICATIONS.

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A CASE OF THIRD DENTITION.

BY H. H. NELLES, D.D.S., L.D.S., LONDON.

Some three months since, a lady of this city, aged about forty-five, called at my office to have a number of roots extracted, preparatory to the insertion of a full set of artificial dentures. As she was within a short period of her confinement, I did not encourage her to have the operation performed at the time. Subsequently, however, upon her insisting upon their removal, I extracted all the roots in the upper jaw, but not considering her a fit subject for the administration of either chloroform or nitrous oxide, I refused to complete the operation under existing circumstances.

A few days ago, she again called upon me to have the lower roots removed, when, upon examination, I found, to my astonishment, that nature had made an effort to supersede my operations, by sending forth a well-developed, superior *cuspidatus*.

As I always consider it unprofessional to interfere with the *scientific* operations of others, and as none of us, in our best efforts, can pretend to compete with nature, I concluded to give her a fair opportunity to develop a full set, and perhaps she will relieve me of any further trouble in the matter. In the mean time I will note progress and report in a future number of your journal.

## THE DENTAL PROFESSION.

*Read before the Dental Association of Ontario, at Hamilton, by RICH. TROTTER, L.D.S., Guelph, Ont.*

I have chosen the dental profession as the subject of my paper, believing that a full and proper acquaintance with, and due appreciation of, its peculiar duties, connections, and relations, are of the greatest importance both to those who are immediately engaged in it, and to the public generally; because I consider that a production of this kind would be very suitable on the present occasion, and would be more interesting to a greater number of members of the Association, and which, if not very able, has, at least, the merit of being mainly original; and because I believe that one of the most essential duties we have to perform at the present time, is to inform or educate the people on the subject of Dentistry.

I do not wish to leave the impression that I consider the people of this Dominion ignorant or uninformed; not by any means; for I consider they will compare favourably with those of any other country in general intelligence. It is true I have been asked by a full-grown man what a dentist was: well, of course, I came to the conclusion that he was most decidedly not possessed of much general intelligence. That, however, was only an exception. But ours is, as far as we and our immediate forefathers are concerned, a young profession, created to a considerable extent by new necessities, and many, otherwise generally well-informed, do not duly appreciate the resources and sufficiency of the Science and Art of Dentistry to promote their health and comfort. This, I think, is mainly owing to two reasons; one is that it is only within a comparatively short period of time that so great a necessity existed, for ours being a specialty; and the other is that it is not long since dentistry has been established on a proper scientific foundation, or practised by any other than empirics, with some noble exceptions, of course. It is a fact that most dentists of experience will confirm, that there is not one-tenth of the benefit received from dentistry that there might be, and this is not owing to a want of means to pay for dental operations, so far as the people are concerned, but because through unskilled and defective treatment they have lost confidence in it, and because they have not yet got into the habit of looking upon early and continued attention to the teeth as a necessity for their health, comfort, and longevity. You may go into hundreds of large families, especially in rural districts, where, perhaps, they build fine houses, add farm to farm, dress expensively and fashionably, and live luxuriously, and yet pay no attention to the teeth unless

they are compelled by pain to have them extracted. The consequence is that before the younger members of such families arrive at the age of twenty, their teeth are a mass of corruption and decay, and have to be removed and replaced by artificial ones; when if they had been properly and regularly attended to by a skilful and honest dentist, with the necessary cleansing, they might have been preserved till an advanced age, and their constitutions saved from the injurious effects which always follow much suffering and disease from dental caries.

The question may be asked what is to be done to obviate this state of things. I would say, inform the people in matters pertaining to the well-being of the truth, through the medium of the press, popular essays on Dentistry, &c., and, above all, turn out none but honest and competent dentists, who will perform successful and skilful operations. Therefore the condition of the profession in Canada has been unfavourable to its efficiency.

There has been no regular system of Dental Education, and I am sorry to say that some of the older members, irrespective of the interests of the profession or that of the public, have made the manufacture of dentists, in a few months, for an important pecuniary consideration, an important branch of their business, to the great discredit of the profession, and injury to the public. But a better state of things has dawned upon us. We have now, by means of association, established a professional sentiment, and no dentist, claiming any respectability as a practitioner, will act contrary to what is considered proper professional conduct; and we have now the authority and power to require that all desiring to enter the profession, be qualified by a proper education and training; and upon this Association and the Dental Board of examiners rests the responsibility of the future elevation and prosperity of our calling.

If we be true to our position by creating and maintaining a proper professional sentiment, and requiring all to possess integrity and knowledge before undertaking the practice of dentistry, our success is certain, the profession will be elevated, and the public will be greatly benefitted.—While I am prepared to cordially extend all due credit to those who have been prominent in the efforts that have been made for our advancement, I most sincerely regret that the old man, Adam, has shown himself as much as he has. Selfishness, the great bane and curse of humanity, that ruthless monster, which has robbed the widow and the orphan; which has caused rivers of human blood to flow; which has prostituted, in many instances, God's own institution on earth, the Church; produced anarchy and confusion in the state, and caused miseries which no man could number, has obtained a little too much. For the interest of the profession,

it is of the greatest importance that every member, in future, will put aside all selfishness, jealousies, desire to utilize public functions for private benefit, and undue ambition to be distinguished above his brother, and that all, cordially and earnestly, both in a private and public capacity, endeavour to advance the interests of his profession. "Union is strength," and in order to maintain that element in our ranks, it is absolutely necessary that the few having control of the interests of the many, make no arbitrary or unjust aggressions on their rights, because if they do, resistance, disunion, and discord will surely arise, on the proper grounds that the Anglo-Saxon feels it to be not only a privilege, but a duty, to protect that which he obtained by the *Magna Charta*, and which he has cherished ever since.

In commencing this paper, Mr. President, I thought I would give a short history of Dentistry, but I found that I had not the resources at hand to do so, as my dental library, in combination with the earnings of twelve year's practice, pharmacologically or chemically speaking, were precipitated in the shape of ashes, not long since; besides I considered that anything like an elaborate history of dentistry, would make the article too long for an occasion of this kind. But I will, if it does not weary your patience too much, concisely sketch the progress of the Dental Art with the view of placing before you our position as a co-ordinate branch of the healing art. Like many other arts the origin of the practice of medicine is involved in obscurity. At a very early age the power to heal the sick, mitigate the pangs of suffering humanity, and stand between disease and death was considered a high attribute.

The ancients, who attached more importance to mythological than natural causes, impersonated medicine in Apollo and Esculapius, and thus its early history has been mixed up with mythology and poetry. Mankind has always, since the fall, been liable to pain and disease, but not nearly so much so in the state of primitive society as they have been since the advancement of civilization.

As they abandoned their more simple habits of living, for idleness, luxury, and vice, disease increased, and with it the need of the physician, and, according to Herodotus, there was a subdivision of medical science, and no practitioner was allowed to practice any but his own branch.

Thus, some were oculists, others attended to diseases of the head, and others to those of the teeth.

Many circumstances might be enumerated to show that dentistry enjoyed as large a share of the attention of the ancients as did any other branch of the healing art. Belzoni, and others, discovered manufactured teeth in the Sarcophagus of the Egyptians, but I question if they were as

good as those manufactured by S. S. White and other American manufacturers. The Egyptians also stopped teeth with gold, as proved by the mummies from Thebes. We have also historical evidence that the Greeks and the Romans paid considerable attention to diseases of the teeth, and the wearing of artificial teeth formed the subject of satire for some of the Poets.

Having shown the autobiography of our profession I will not attempt to treat of its progress down to the present time, in an elaborate way; suffice it to say that the dental science can not only claim antiquity, but that it has kept pace with the march of science. Not only so, it has made greater strides of advancement during the last half century, than any other.

Although we can claim antiquity in connection with our calling, yet as I have before said, we are, in many respects, a young profession, for the reasons that I have already stated.

To our cousins, to the south of us, we must, in honesty, give the credit of doing more to advance the science and art of dentistry than any other people.

While this may be attributable in a great degree to the energy of character, ingeniousness, and practical turn of mind which characterizes Brother Jonathan; it may also be attributed to the much greater necessity that exists among them for dentistry being a distinct branch of professional science, than has existed among their forefathers; and true to their flexibility of character they have adapted themselves to circumstances. What dentist of experience on this continent has not observed that the dental organization of to-day is not inferior to that of former years? The causes of this difference I will not attempt to give on this occasion, deeming it of sufficient importance for another paper, and of sufficient importance to call for the particular attention of every parent, and medical and dental practitioner; believing as I do that there is something seriously wrong when organs playing such an important part in the animal economy fail so prematurely.

How common and how sad it is to see our rising generation, from infancy, almost continually suffering, and their constitutions shattered in consequence of a defective and abnormal dental organization.

After a good many years experience and observation in dental practice, I have been led to the conclusion, that there is not one person in fifty in this country, whose dental organs are in a healthy and normal state. Some may talk lightly of our profession and consider us only tooth-pullers, but I feel that the field of our labour affords as ample a scope for benefiting our fellow-creatures as that of any other profession. The human

system is often compared to a machine. Now it is well known that if a cog or a wheel, or any other essential part of a machine, becomes deranged, the whole is sure to suffer. So it is with the human system: if any organ or organs become deranged, the whole is likely to be affected. And when we consider that at the present time it is only an exception to find a person whose dental organs are in a healthy condition, we must arrive at the conclusion, considering the primary causes and ultimate effects of such a state of things, that our people are degenerating physically. These reflections, and the fact that it is our especial province to point out and ameliorate what is wrong, is sufficient to convince any sensible person that we have an important duty to perform, and that as a profession, we are indispensable; unlike our noble sister profession, the medical, we, perhaps, never have directly to step in between life and death, and therefore, in that respect, are not so important. But it is a question with me, if our sphere of operation does not afford us power and opportunities to promote the health and comfort of the people to as great an extent as theirs do, and if we can be the means of rectifying the present degenerated condition of the organs which we profess to treat, and prevent human suffering, we will be worthy of the title of Licentiates of the Royal College of Dental Surgeons. The opinion of a gallant knight, to the contrary, notwithstanding.

Dentistry, to a considerable extent, is a mechanical profession. But to be a useful and efficient dentist implies a great deal more than to be able to perform well the necessary manipulations, although that requires a great deal of knowledge, tact, and experience. Dentists, to be useful, and to command respect and influence, should possess general intelligence, and a liberal education, and be fitted to act the part of gentlemen with the public and their patients. This is necessary not only for the credit and interest of the profession, but also for the people. A large portion of dentists' patients are persons of intelligence, taste, and refinement, and if the dentist does not possess these qualities, which command respect from such, he will not obtain that full confidence in his professional capacity which is necessary for the successful practitioner; besides their professional acquirements, which ought to embrace all the collateral sciences, which are indispensably necessary for the efficient practitioner, viz., Anatomy, Physiology, Pathology, Therapeutics, Chemistry, and Metallurgy. It may be asked by some who look upon dentistry as a purely mechanical calling, why we need a knowledge of all these sciences. I would answer, that a knowledge of the structure and function of organs lies at the very foundation of our ability to prevent disease, and cure them when out of order. So it is with Pathology, if we do not comprehend the nature

of diseased action, in combatting it, we work in the dark, and are as liable to fail as succeed. And if we are not informed as to the therapeutical action of the remedial agents, which science and experience has produced, how are we to use them intelligently? Chemistry, too: as Logarithms are to the mathematician, so is it to dental science. It is, in fact, the fundamental element of dental knowledge. It is by the light of Chemistry that we determine the nature and causes of defective dental organizations, and the means necessary to be used in order to produce healthy and normal tissue, and it is by it that we are enabled to prevent and neutralize the action of those agents which act so destructively on the teeth.

As to Metallurgy, the reasons why the scientific and practical Dentist should be well informed on that branch of knowledge, are too obvious to need any remarks.

The object and end of our individual and associated efforts ought to be to raise our status, to give professional skill its rightful pre-eminence, and to crush that charlatanism which has, in too many instances, succeeded in preying upon the public health and purse, under the pretended knowledge of the theory and practice of dentistry.

To effect this we must follow the example of our neighbours across the lines, by throwing aside small jealousies and invidious distinctions, and allow a free communication of ideas among the members of the profession; which has, among them, brought to a successful accomplishment, the work of establishing associations for the protection and furtherance of the common interest. As I have intimated, we in this country have not had the standing of a recognized profession, neither have we had any common link to bind us together for the advancement of the dental art. Each member has done the best he could to further his own ends, and too often has viewed the exertions of his brotherhood through a contracted medium, if not with jealous feelings of envious rivalry.

As our profession has been put on a different footing, we ought no longer to fear the wholesome competition that is seen to arise from its elevation.

I did think of defining the principles of action which ought to guide us in our relations with one another and our sister profession at home, and in our private practice, but when I got this far, I felt that my paper was already too long. I will, therefore, only say that the principle which should guide one gentleman in his actions towards another, ought to be the rule of conduct which should guide us in our actions with our fellow practitioners.

## TREATMENT OF SIMPLE CAVITIES.

BY. W. H. WAITE, D.D.S., LIVERPOOL, ENGLAND.

By "Simple Cavities" we understand those only which involve no encroachment on the pulp cavity of the tooth. They may occur in every conceivable situation, but are most commonly found upon the approximal surfaces of front teeth, and the masticating surfaces of back teeth. For successful treatment, three principal considerations are essential.

1st. Freedom of access. This is to be obtained by wedging, either with india rubber or wood, the latter being probably better of the two, or by filing, or the use of the chisel, according to the position and nature of the cavity. Access should be clear enough to permit the operator to see every portion of the cavity, either directly or with the mirror, and also to allow of the excavator and plugger touching the whole floor and sides of the cavity to any extent which may be desired. Whatever is necessary to afford such access ought not to be spared, either out of respect to the appearance of the tooth or the feelings of the patient—since if the cavity is worth filling at all, it is certainly worth doing in the best possible manner.

2ndly. Strong walls. These are most difficult to secure in front teeth, and it is often necessary to sacrifice some amount of substance in order to obtain sufficient strength for thoroughly condensing the gold against. If this point be overlooked in preparing the cavity it is pretty sure to thrust its importance forward upon the operator's attention during the introduction of the gold, probably by the giving way of the outer or inner wall of the enamel, disfiguring the contour of the tooth, and rendering the operation highly unsatisfactory to operator and patient.

3rdly. Good retaining points. If adhesive gold is employed, these should consist of two or more small holes drilled in opposite sides of the cavity, and they should be filled as solidly as possible. If non-adhesive gold is used, the shape of the cavity should be such as securely to retain the filling after its introduction. In approximal cavities the sides should be parallel, and the upper and lower surfaces slightly undercut. In cylindrical cavities the walls should be as nearly even as possible, slightly undercut beneath the enamel.

These precautions are indispensable to proper preparation of simple cavities; in these we most frequently come upon sensitive dentine, the remedies for which are, creosote and tannin, creosote and chalk, chloride of zinc, &c., &c.

Time, labour and care spent in forming the cavity, will be repaid with interest, by facility of introducing the filling, and by the character of the operation when completed.

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## SENSITIVE DENTINE.

BY R. A. ALLOWAY, D.D.S., MONTREAL.

Sensitive Dentine, properly speaking, is a diseased condition of that part of the tooth, and is either brought about by some pathological change, derangement, or external injury; and whenever we have any of the above metamorphosis in the healthy condition of dentine, there is as a natural consequence, hyper sensitiveness, which, if not removed, will cause, under our physiological law of conduction of nerve force, toothache, ultimately under the law of radiation or reflection, producing facial neuralgia through the media of the fifth and seventh pair of nerves, which last condition very often results from the carelessness of the practitioner, or probably, more often, from negligence of the patient.

Now that we have arrived at some clue to the cause of the disease, our next duty is to draw attention to the removal of that cause if possible, and if not, to the disagreeable consequences issuing therefrom.

Remedies at the present time are so numerous and different in their after results, that it is very difficult indeed to say with sincerity, "that ours is *the specific*." And if such a conclusion could be possibly arrived at by the ardent researches of the members of our profession, it would tend in a great measure to obviate much of the sufferings of our patients, render the operations less disagreeable, and lastly to bring about a more successful result in the end. A question often asked us by our patients is, "why is it my teeth are so sensitive." Our answer, in many cases, is not at all satisfactory to him. He will persist in telling you the nerve of his tooth is exposed, and shudders at the idea of having you "dig at his tooth," (as he calls it,) by which you rake up a new nerve at each cut of the excavator.

There is no doubt that this sensation is caused by conduction along the nerve filaments, radiating from the pulp cavity, into and between the tubuli, which is of course affected primarily by the continued shocks of the instrument upon the part.

Some of our most eminent authors on this subject, as for instance, Dr. C. A. Harris, say: This acute sensitiveness is due to the presence of nerve fibres. Also, Dr. Maynard and Professor Johnston, whose micro-

scopical researches demonstrated the fact that nerve filaments constitute an essential element of dentine, and Mr. Tomes goes so far as to say that their is nothing more easily demonstrated than the existence of dental fibril, in any tooth that has recently been extracted. Contrary to this, Dr. McQuillen, in his report to the American Dental Association on Dental Physiology, says, "in experiments concerning the existence of these dental fibrils, I cannot truly say I am able to support the supposition."

In the treatment of this disease arsenic is the universal favourite, but those who decide to use it should be very careful on account of the bad results which follow it. A host of other remedies, but each in turn are questionable as regards their efficacy. Arsenic is without doubt considered in our profession *the* specific remedy, but for all that it is a medicine I would caution all practitioners against. I have seen it used, and have used it myself in many cases; in many of which I have seen the most serious results following, especially in young patients. The practice of some operators in using it for very slight and uncalled for case is absolutely absurd. The best, and from which we get the most satisfactory results, are creosote, tannic acid, chloroform, and sulphate of morphia; also chromic acid I have found serviceable, but it must be applied in its dry state, as in solution it would produce discoloration of the tooth, which is its principal objection. Creosote, tannic acid, and sulphate of morphia can be applied separately without any danger whatever, but must be sealed with a temporary filling to prevent the action of the secretions of the mouth; it should also be placed in direct contact with all parts of the sensitive dentine, and allowed to remain for the period of three or four days.

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## PROCEEDINGS OF DENTAL SOCIETIES.

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### PROCEEDINGS OF THE DENTAL ASSOCIATION OF ONTARIO, AT HAMILTON.

BY R. G. TROTTER, I.D.S., COR. SEC.

15th July, 1868. *Evening Session.*

Mr. J. O'Donnell, President, in the chair.

J. S. Scott moved, seconded by J. H. Bryant, that George J. Potts, M.D., of Belleville, having been the first to recognize this Association, by inviting it to send delegates to a meeting of the Medical Alumni

Association of Victoria University, at Toronto, last fall, be elected an Honorary Member of this Association.—Carried unanimously.

Moved by R. Trotter, of Guelph, seconded by W. H. Porter, of Holland Landing, that whereas by "an Act respecting Dentistry," a provisional Board of Trustees was appointed by the Legislature of Ontario; and whereas, by that Act "all persons being British subjects by birth or naturalization, who have been constantly engaged for five years and upwards in an established office practice next preceeding the passing of this Act, in the practice of the profession of Dentistry, shall upon proof of having been so engaged, and upon payment of the fees authorized by the said provisional Board, be entitled to a certificate of license to practice Dentistry. And whereas said Act required a regular Board of Directors to be elected on the second of June last,—and the persons qualified to vote at said election were those who had complied with the provisions aforesaid, and paid the fees as fixed by the provisional Board, and had received a certificate of license, at least one month before said election—and whereas, some forty dentists complied with the requirements of the Act aforesaid, and paid the fees at least one month before said election; and whereas the provisional Board, we have reason to believe, having failed to meet and grant licenses one month before said election, thereby depriving said electors of their franchise, in the election of directors; and whereas they met on the second of June, and, contrary to the spirit of the Act, elected themselves,—therefore it is resolved by this Association that the course adopted by the provisional Board, in depriving qualified dentists of their right to vote in the election of directors, was, to say the least of it, contrary to the spirit of the Act respecting Dentistry, an injustice to the profession, and highly discreditable to themselves.

After a lengthy discussion, the members of the Board present, stated, that now that the matter had been fully discussed, they did not object to the passing of the resolution, when it was carried unanimously.

*July 16th, 1868.*

Association met at 9 A.M. Present: J. O'Donnell, L.D.S., President, and twenty-three members. The following were appointed a Standing Committee on Grievances, to whom was referred the application of C. Cartwright, for membership, viz., Messrs. Lemon, Scott, and J. F. Kennedy, of Perth, who recommended that Mr. Cartwright's name be placed upon the list of applicants for one year, he not being sufficiently known to warrant his election, and that he be entitled to all the privileges

of membership, except voting.—Report adopted, in which Mr. Cartwright concurred.

Mr. J. S. Scott read a letter from Dr. B. T. Whitney, of Buffalo, N.Y., an honorary member of the Association.—Received, and a vote of thanks extended to the writer.

Also a letter from G. V. N. Relyea, of Belleville, inviting the Association to meet in that town.—Received and filed.

A discussion followed on the premature decay of the teeth, in which Messrs. Callander, Clements, and Chittenden took part.

A. C. Campbell, of Brooklyn, was elected a member of the Association.

C. S. Chittenden moved, seconded by F. G. Callander, that the thanks of this Association be extended to the proprietor of the Royal Hotel, Hamilton, for the use of his spacious dining-parlor, and for courtesy to members of the Association.

Also to the Grand Trunk and Great Western Railway Companies for their kindness in granting return tickets, at one fare, to the dentists attending this meeting.—Carried.

J. H. Bryant moved, seconded by Robert Reid, that the Recording Secretary be requested to forward a copy of the resolution passed at the last session, disapproving of show-cases of Mechanical Dentistry being exhibited at the door of an office, to any dentist not complying therewith.—Carried.

Mr. E. Snider moved, seconded by F. G. Callander, that D. A. Bogart, L. Clements, and J. H. Bryant, be requested to read papers at the next meeting.—Carried.

F. G. Callander moved, seconded by M. E. Snider, that J. O'Donnell, J. S. Scott, and W. C. Adams, be appointed to perform Clinics at the next session.—Carried.

Charles Kahn, Stratford, stated that the mover of the resolution fixing London for the next annual meeting, desires that the motion should be reconsidered.

L. Clements moved, seconded by D. A. Bogart, that resolution No. 24 be rescinded, and that the next annual meeting be held at Belleville,—leaving the January meeting at Toronto, as before decided.—Carried.

C. S. Chittenden moved, seconded by J. S. Scott, that C. H. Hubbard, Esq., be elected an honorary member of the Association.—Carried.

The Association then adjourned.

PROCEEDINGS OF THE DENTAL ASSOCIATION  
OF QUEBEC.

On the 2nd instant, a meeting of Montreal Dentists was held in this city to form the nucleus of a Dental Association for the Province of Quebec. The meeting was hastily called together, as it was desirable to have the presence of Dr. Scott, Secretary of the Dental Association of Ontario, who happened to be attending the convention of the Canada Medical Association, then in session in our city. It was felt that Dr. Scott could explain the *modus operandi* of the movement in Ontario, and by his knowledge of the particulars of that movement, materially assist in smoothing the difficulties in the path of a new organization.

The following Dentists were present.—A. Bernard, C. F. F. Trestler, M.D., C. Brewster, J. A. Bazin, R. A. Alloway, R. W. Cantwell, J. S. Scott, W. G. Beers. Dr. G. J. Potts, of Belleville, Secretary of the Medical Alumni Association of Victoria University, was also present. Prof. Berryman, of Toronto, and Dr. G. W. Boulter, M.P.P., of Stirling, hon. members of the Dental Association of Ontario, sent apologies for their absence, as it was their intention to have been present, but for duties in connection with the Medical Association.

Dr. Bernard was appointed Chairman, W. G. Beers, Secretary.

The Chairman briefly stated the objects of the meeting, viz., to organize a Dental Association for the Province of Quebec, with objects and intents similar to that of Ontario.

Resolutions were then passed favouring the project, and that a convention of Dentists in the Province should be held in Montreal on the 17th instant, to consider and adopt a constitution and by-laws, an act of incorporation, &c. A committee was appointed to draft a constitution and by-laws and act of incorporation; and a provisional board of officers elected.

A resolution was passed, thanking Dr. Scott for his timely and valued assistance in organizing the Association, and the meeting adjourned to meet on the 17th instant.

*September 17th.*

The meeting of Dentists in the Province of Quebec was held this afternoon.

PRESENT :—Messrs. Bernard, Trestler, Brewster, Leblanc, Bazin, Belle, Webster, Alloway, Valois, Nichols, Beers, of Montreal, McKee, of Quebec; Lefaive, of St. Johns; Dowlin, of Sherbrooke; Brodeur, of St. Hyacinthe.

Apologies for absence were received from Drs. Baillargeon, of Quebec, and Bowker, of Montreal.

In absence of Dr. Bernard, Mr. Brewster took the chair and explained the objects of the convention.

A verbal report was made concerning the non-appearance of the proposed constitution and by-laws, the committee being disappointed in reception of the Constitution of Dental Association of Ontario, which it was thought advisable to have for inspection.

The minutes of last meeting were read and approved of.

It was then proposed by Dr. Trestler, seconded by Dr. Lefavre, that the election of officers for the present year be now proceeded with.

The following officers were then elected:—A. Bernard, President, Montreal; Baillargeon, M. D., 1st Vice-President, Quebec; C. F. F. Trestler, M.D., 2nd Vice-President, Montreal; W. G. Beers, Secretary, Montreal; C. Brewster, Treasurer, Montreal; J. A. Bazin, Librarian, Montreal.

Executive Committee.—H. M. Bowker, Montreal; McKee, Quebec; Lefavre, St. Johns; Webster, Montreal; Fiske, Waterloo; Leblanc, Montreal.

The Secretary read the Ontario Act respecting Dentistry, by request of the Chairman. One objection was made to the clause in article 12, making "naturalization" compulsory.

Mr. Dowlin said he was an American, and having settled in Canada, was quite willing to be naturalized, and was in favour of the clause. The feeling of the meeting was that it should form part of the Quebec Act.

It was then moved by J. A. Bazin, seconded by H. Davis, and resolved, that the committee appointed at last meeting on constitution and by-laws be discharged, and that the executive committee, with the other officers, be instructed to draft a constitution and by-laws for this Association, and an Act of Incorporation, to be printed in English and French, and furnished to the members for their consideration.

Moved by C. F. F. Trestler, seconded by J. H. Webster, and resolved, that copies of the proposed constitution and by-laws and act of incorporation, be furnished to every member of the Association 20 days prior to the next meeting.

Moved by C. Brewster, seconded by — McKee, and resolved, that the President and Secretary be empowered to make application to the Local Legislature for an Act of Incorporation for this Association.

Moved by J. A. Bazin, seconded by E. Lefavre, and resolved, that the entrance fee for active members be \$5; for incipient members \$3.

Moved by J. H. Webster, seconded by N. Fiske, and resolved, that the next meeting of this Association take place on 28th of October, at 7 o'clock.

Dr. Bernard extended an invitation to the members to hold the next meeting at his residence, 1002 St. Catherine street, corner of Metcalf, which was unanimously accepted.

It was understood that the office-bearers should meet on the 28th inst. to prepare a constitution and by-laws and an Act of Incorporation.

Before adjourning, Dr. Bernard requested leave to say a few words. During an experience of 35 years in Dentistry, he was more convinced than ever of the necessity for association, and the great boon to be derived therefrom. He would have been pleased to have seen some other member appointed to the position of President, owing to the numerous claims upon his time; but he would cheerfully co-operate in any way to further the objects for which the Association was organized. He was much pleased at the unanimity which characterized the meeting; trusted the members would often meet for practical discussion, and that this Association would be the means of benefitting its members individually, and the community at large.

The meeting then adjourned, to meet at Dr. Bernard's residence on the 28th of October.

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NOTES FROM THE PROCEEDINGS OF DENTAL SOCIETIES.—*Maryland State Dental Society, May 28th.*—Dr. E. P. Keech called attention to an anomalous case which had recently come under his notice. It was that of a young girl, about twelve years old, in whose mouth the two temporary superior central incisors, were replaced by two teeth, which, in size and shape, closely resembled the third molars or wisdom teeth. Dr. K. exhibited the teeth, and a plaster cast of the mouth, taken before they were extracted.

The propositions of Dr. Arthur, (see first number of C. J. D. S.) were then taken up, and after some discussion, the first proposition was changed to read as follows:—

1. That caries of the teeth of the majority of children of the better classes of people in the United States at the present day, will certainly occur, sooner or later, on proximate surfaces of all the teeth, except the inferior incisors.

A vote was then taken by yeas and nays on each proposition, separately, and resulted in their unanimous endorsement by the members present, except the last proposition, which was laid over until the next meeting.—*American Journal Dental Science.*

AMERICAN DENTAL SOCIETY.—*Niagara Falls, July 28th.*—Dr. Westcott, Syracuse, described his means of regulating an upper and under set of teeth, of which casts were presented. He said the first effort to move a tooth should be very slight, for then more could be done at the second effort with less pain. Neither spring nor elastic substances should be used if it were possible to avoid them; and to the almost exclusive use of wooden wedges, in the present case, did he attribute the absence of inflammation, notwithstanding the great extent of the movements attained. Preferred not to use a plate; but where that was unavoidable, it should be dispensed with at the earliest possible moment. Made it a rule to obtain the lateral movements first, and finish that, before beginning the longitudinal movements. Where teeth are so short as to make it difficult to get hold of them, he drills into them, and insert a gold screw or staple by which to make attachments. Any ill effects of any regulating apparatus, upon the substance of the teeth, might be obviated by removing the plate and cleaning it after each meal, cleansing the teeth and rinsing the mouth with soda water.

Dr. Ringsley presented several improvements designed to remedy defects congenital or acquired, in the hard or soft palate. He distinguished between congenital and accidental deformities. Patients suffering from the former require months, and sometimes years, to overcome the difficulties of articulation, while in accidental lesions, not only is the appliance much more simple in its character, but the results are attained immediately on its introduction.

He exhibited his instruments, and also his moulds, describing the various processes of manipulating. Dr. Bogue, from the standing Committee on Dental Pathology and Surgery, recapitulated the points which, in this department, had attracted special attention during the year. The question of the contents of the dentinal tubuli; of the efforts of the dental pulp to protect itself from the approach of decay by the consideration of the intervening dentinal tissue; and the results of recent efforts for the preservation of exposed pulps. He inferred that the pulp is as capable of reparative processes as other vascular structures. Salivary calculus was treated as a direct source of injury, and its perfect removal necessary, to be followed by an application of escharotics to induce renewed action of the peridental membrane. In the treatment of epulis, an apparent extirpation was not deemed sufficient, but a removal of the surrounding healthy tissue was demanded, to be followed by thorough cauterization.

Dr. J. S. Dodge, jun., referred to certain dark-colored nodules found upon the roots of teeth, and even upon their extreme ends. He could not agree with the common opinion which considered these to be depo-

sits of a calcareous nature from the saliva ; there was no practical limit to the deposit of tartar upon the exposed portions of the tooth, but it was confined to the border of the gums, and was of a light colour. Black nodular deposits were never found but on the roots of teeth, under the soft parts, and never in large masses, and their tendency was to work to the apex of the fang. Some other source must be found for them than that of deposit from the saliva. He had tried to make microscopical sections of them, which, from their size and formation, was difficult, but in two instances he had partially succeeded. The whole mass was composed of very regular concentric layers of accumulations, in aggregated spheres, not similar to any organic forms in the body. So much had been seen : his conclusion was, that these nodular masses were deposits of calcareous matter similar to those thrown out by the periosteum for the formation of bone, but being in a diseased condition, the process was merely carried so far as to form aggregations on the surface.

Dr. Atkinson had never seen such a deposit, except where it had advanced, as tartar does, on the recession of the gums ; and even where the gum and peridontium were disconnected from the tooth to such a degree as to loosen it, he would not despair of restoring the original attachment. His process was to thoroughly remove every portion of the deposit, whatever its character, not being at all fearful of cutting into the substance of the cementum, wash clean, and inject once thoroughly, with a hypodermic syringe, a solution of chloride of zinc. This treatment he would pursue, not merely for nodular deposits, but also for rings below the margin of the gums. He remarked that it was questionable whether hard tissues once fully formed undergo any change.

Dr. C. R. Butler inquired how Dr. A. got at the end of the root for deposits at that point.

Dr. Atkinson replied that he followed up the open channel, whether by the side of the tooth or a fistulous opening through the alveolus, and rasped off the end of the root, never disturbing the connection between the soft parts and the tooth, at its neck, when that was intact.

Dr. Butler had never seen the accumulations spoken of on roots where the periosteum was intact, but found it common on the parts denuded. When he deemed amputation admissible he would have no fear of disturbing the alveolus, unless the condition of the patient forbade any operation whatever, but would clip off the apex of the root in whatever manner was most convenient.

Dr. Bogue alluded to cases coming under his observation directly from other practitioners, who pronounced the teeth free from tartar ; yet the teeth would be lost if left as they were. The only indication in these

instances was a redness of the margins of the gums, and he found always that the alveolus was absorbed and the periosteum detached. He had never practised the amputation of the end of the root, but had succeeded in removing the nodules after repeated effort, and then made mildly escharotic applications.

Dr. H. Judd said it must be conceded that the origin of these masses is either from inflammatory action or by deposit from the saliva. In the latter case there must be external communication, and in recalling instances to mind they supported this hypothesis. Carbonate of lime, when mixed with fatty substances, forms in globular masses.

Dr. McClelland was of the opinion that deposits from the saliva would be found where that secretion was most abundant; its being found under the gum was conclusive evidence to him that it was thrown out by the peridental membrane.

Dr. McQuillen agreed with the opinion that tartar could not be deposited without an external opening. Referring to the intimation of a doubt whether the hard tissues could undergo change, he said that there was no tissue in the animal or vegetable kingdom, with the possible exception of the enamel, which does not undergo continual change. Have not the investigations and experiments of Hunter, Duhamel, and others proved this most conclusively? Dr. Lionel S. Beale was the first to take exception to the general view relative to changes in hard tissues, and the speaker combated his statement several years ago. He cited, in proof of constant change, the formation of the frontal, sphenoidal, and maxillary sinuses, the diploe in the flat bones, and medullary canals in the long bones, and the process by which the deciduous teeth, after being built up cell by cell, at the proper time, by a retrograde metamorphosis, are absorbed cell by cell. In the permanent teeth the evidences of change were constantly occurring—as in hypertrophy of the cementum, and the not infrequent absorption of the cementum and dentine in other cases. Permanent teeth extremely soft in early life become almost as hard as flint at a more advanced age. Again, teeth which had been quite dense and perfect in their structure, as in the case of females, after the commencement of the maternal functions lose much of their former hardness, owing to the waste constantly going on not being supplied by a sufficient amount of material to meet the demands of mother and child; in which case the latter is nourished at the expense of the former, and the mother's bones and teeth become softened.

Dr. John Allen urged the necessity of providing in the food materials which should supply, atom by atom, the wants of the system. He asserted that, as a nation, Americans have the worst teeth of any people,

because they change the proper proportions of the constituents of the food; while in countries where this is not done, the people retain their teeth, sound and beautiful, to old age. To show the gigantic scale on which we do this, he said that from every barrel of superfine flour, 40 pounds of mineral matter were rejected in the process of manufacture; and, allowing half a barrel of flour as the yearly allowance of a child, every child is deprived of 20 pounds per annum of the material most necessary for perfecting the osseous structure of the body, making an aggregate loss to the system, in twenty years, of 400 pounds.

Dr. Atkinson said the whole philosophy of filling teeth depended on the assumption of the durability of their structure. He delights in putting things into the teeth that irritate them. Without irritation there could be no nourishment: the similarity or dissimilarity of the irritation, produced by remedies or food, to that required by the organism determined the ascendancy of health or disease. The rule had been that when the pulp of a tooth became exposed it should be devitalized and removed, and the root filled to its end. He asserted that a man was weak or wicked who would wilfully destroy a tooth pulp; all that was necessary was to use an agent which would coagulate the albuminous surface of the exposed pulp, and the subsequent operations were certain to be successful. His practice was to cover the exposed pulp with creosote, upon which he dropped the oxychloride of zinc in a plastic condition; when this had hardened, he proceeded to remove the excess of the material and fill the cavity as usual with gold. If the inflammation had gone on to suppuration, he would fill temporarily. Suppuration is the production of pus, and pus is a fluid composed of serum and white corpuscles deprived of their vitality. All the tissues of the body are made up of corpuscles, the white forming the nerve tissues; the red, the muscles. Cohnheim had seen the corpuscles pass through the walls of the capillaries.

Dr. B. T. Spellman said that he did not understand the white corpuscles to be a component of pus, but that their character was changed by diseased contact. He had heard, from many witnesses, that the treatment of exposed pulps just detailed was in their experience productive of much pain, and therefore he considered it bad practice.

Dr. McQuillen said pus was regarded, by the best authority in surgery, as a fluid, composed of dead exudation corpuscles floating in serum, these exudation cells, in their normal condition, being the tissue builders. It was impossible that white corpuscles could pass through the walls of vessels to be incorporated in the structure of nerve tissues. He had been accustomed for years to demonstrate to his students the circulation of the blood in the frog's foot, tongue, lungs, and in the mesentery, and had

watched the process by hours, and had yet to see the phenomenon referred to. Admitting Cohnheim's observations to be correct (which he was not disposed to do), the propriety of drawing deductions from pathology to sustain physiological theories was a very defective and illogical method of reasoning. The number of persons who had seen ultimate nerve fibres was exceedingly limited. Only those who had employed the higher magnifying powers could lay claim to this distinction. The corpuscles rolling through the capillaries might appear to pass through the sides of the vessels, but it was only an ocular deception. The caliber of an ultimate nerve fibre was infinitesimally smaller than that of a white corpuscle, and, in addition, it was made up of three distinct structures, the neurilemma, the white substance of Schwann, and the axis cylinder. How, then, can a corpuscle make up such a nerve fibre? The same objection held good with respect to muscles being formed from the red corpuscles. The ultimate muscular fibrillæ (which consists of the myolemma, a membranous sheath inclosing the sarcous elements) is much more minute than the red particles of the blood. Many years ago similar views to those presented here were advanced by Doellenger and Dutrochet, and their fallacy was then exposed. The perfection at which microscopy has arrived, and the use of good instruments, enable us, by comparing with precision the size of different parts, to completely refute this untenable theory.

Dr. Wetherbee stated that, two years ago, when he spoke of the use of the oxychloride for capping pulps, Dr. Atkinson expressed his doubt of its adaptability. He gave his experience in a number of cases where he had succeeded in its use. Frequently there was pain for a short time, but without subsequent uneasiness. He does not consider the pain dangerous, or the material in any manner endangering to the pulp; it acts as an astringent. Two cases in which the pulps bled, two years ago, now have all the indications of living structures.

Dr. J. S. Dodge, junr., said, if the effort to preserve exposed pulps were any new thing that had not been tried heretofore, he would go home to try it with a good deal of zeal. But this was not the case; it had been a favourite practice years ago with the old practitioners, and when he commenced his practice he was somewhat enthusiastic about it, though even then the old men had begun to shake their heads about it, and since that they had been shaking them harder and harder, until the operation of filling over exposed dental pulps had gone out of date. Now a new material was coming into fashion, it appeared, for the same purpose, the oxychloride of zinc. Put this in a sensitive tooth and it would cause severe pain, and its effects upon an exposed pulp, he believed, would be ultimately to destroy it.

Dr. Allport said that exactly what proportion of exposed pulps could be preserved by any method could only be stated after the comparison of a large number of recorded cases. After the explosion of the theories of Harris, those who enunciated any method of saving pulps were looked at with a quizzical glance. He then referred to the operation which he had introduced, consisting of an excision of a portion of the exposed pulp, which was relieved of congestion by the consequent bleeding, leaving flaps to come together and heal by first intention—admittedly a very difficult operation—and claimed that he had by that method saved a large number of teeth, and obtained a new calcareous deposit at the point of exposure.

The treatment prescribed by Dr. Harris gave the pulp the best possible chance to inflame and suppurate, by leaving a space between it and the cap. He would have gentlemen not deny what they had not tried; he had not used the oxychloride, and knew nothing about it, but half believed what had been said about it to be true. He believed there was something living in the pulp. Kölliker, years since, said the dentinal tube or canal was an elongation of the dentinal cell resting on the pulp. In a recent work he reiterates this, and says this is the channel through which the calcareous mass is deposited, and this would account for the increased density of portions of dentine near points of decay.

Dr. Wetherbee, in answer to a question, qualified his previous statements as referring to pulps simply exposed, not inflamed. He said that no large amount of oxychloride should be allowed to remain in the tooth longer than a few weeks, as the free acid in the preparation would act most injuriously upon the substance of the tooth.

Dr. A. W. Freeman said he had obtained as good results as that with Hill's stopping.

Dr. Kennicott thought misunderstanding arose from some attributing a medicinal virtue to the material under consideration, whereas he considered any good resulting from its use to be due to mechanical causes. No sensible man would proceed to fill permanently over an exposed pulp until he was sure that it was in a healthy condition; every application previous to that should be considered preliminary treatment. The oxychloride was a substance which, applied in a plastic condition, adapted itself without pressure to the exposed vascular pulp, and then, on hardening, protected it for a time from the action of external agents.

Dr. Horne said that he had waited up to this time in the expectation that the various advocates of the new plan, if let alone long enough, would destroy one another's arguments, and his expectations had been fulfilled. The use of the oxychloride of zinc had been first brought to

general notice at the meeting, two years ago, at Boston, where Dr. Keep, of that city, claimed large success in a number of recorded cases. It was a question in his mind if the material which Dr. Keep used was at all like the material sold under that name in the dental depots; and the gentlemen who had thus far spoken used the oxychloride of the shops, and not Dr. Keep's preparation, as far as he could judge. The whole claim really amounted to about this: A preparation, called oxychloride of zinc, consisting of a white powder, which is mixed into a mortar with an acid fluid, is plastered into the tooth over an exposed pulp; the patient has more or less pain for a longer or shorter time, and then it stops; after hardening, cut away the surplus material and fill the cavity with gold, and, where there is no subsequent pain, conclude that the pulp of the tooth is alive and all going well. Some modify this process by covering the exposed pulp with creosote before putting in the mortar, and claim that there is then no pain felt. A great many who had tried the same process had had a great deal of subsequent pain to contend with. But all this superstructure had been built upon the slight foundation of some temporary apparent success, opposed by a great deal, perhaps more, of evident failure, in the face of the well-known fact that teeth containing dead pulps might lie dormant years and then break out into the most troublesome activity; and also that pulps, after having been exposed, might, on the condition of the exclusion of air and moisture, quietly die and become atrophied. On the other hand, it was as certainly true that an exposed pulp was occasionally found which, having maintained its healthy vitality, and being protected from external irritation, threw out from its enveloping membrane a deposit of secondary dentine, which more or less perfectly shut up the opening into the pulp cavity. But these cases were so rare that men would go from one city to another to see them. Admitting all the favourable cases cited to-day as perfectly true, so far they were utterly insufficient to prove that the pulps in question were not now dead, or undergoing a slow destruction by the free acid whose presence had been so incautiously alluded to, or by the powerful escharotic (creosote) used to abate the pain caused by the acid, and whose legitimate action would be to destroy the soft tissue with which it came in contact, insuring to it only a less painful death. While experimentation was to be sedulously encouraged, he deprecated the confident assertion, as fact, of what was only supposition. Let us see what a few years may bring forth. Other theories, as well supported as the one here presented, had needed but a short time to run themselves out; and he was therefore the more careful not to fall at once into every new current, but rather disposed to prove all things.

The Committee on Mechanical Dentistry reported, through its chairman, Dr. B. T. Spellman, of Warren, Ohio. He noticed, in order, the several materials in use as bases for artificial teeth. As to Colburn's material, the report agreed with the manufacturer that it would answer for temporary use, not to exceed a few months. Newbrough's rubber being prepared by a new process, the committee are unable to report whether it will stand the fluids of the mouth or not. It possesses the same properties as dried vegetable ivory, and that soon softens in the mouth. The wicked raid made by the rubber company had induced some good men to be too sanguine of it. The Simpson rubber had disappointed the profession. Dr. McClelland was invited to come before the committee and explain his process, but he neither came nor replied. Of the merits of this material they know nothing, but are glad to report that there is much talent and industry devoted to the discovery of something which will take the place of rubber. The porcelain base is recommended as growing in favour and unsurpassed for cleanliness; the contour of the face is as well restored by it as by the platina and continuous gum work. There is no trouble in making an upper or under set; it can be ground to fit the plaster cast in about the same time needed to get up a set of rubber blocks; the marks of the stone to be obliterated by a coating of gum enamel fused on afterward.

Artificial palates have been simplified to such an extent as almost to render staphyloraphy obsolete.

The committee reported no improvement in the status of mechanical dentistry, the advent of rubber having driven the best men from the laboratory in disgust. They recommended only gold for partial cases, and Dr. J. Allen's continuous gum as the ideal fully attained in supplying lost teeth and restoring the contour of the face.

Dr. C. R. Butler, from the Committee on Dental Therapeutics, reported that he had seen the best results, in treating sensitive dentine, follow the use of carbolic acid and the acetate of morphia; he did not consider it safe, however, under all circumstances. He had found tincture of aconite root to work favourably in cases of facial neuralgia or peridontitis. Chloride of zinc, in varied dilutions, is a valued remedy in the treatment of many oral diseases. He did not perceive the advantage of phosphate of lime to remedy defective dental tissues; he believed there is not a lack of material but of assimilative power in the organism.

A special Committee on Instruments and Appliances, consisting of Dr. Shepard, of Boston; Bogue, of New York; and Smith, of Cincinnati, reported improvements in dental chairs, by Drs. J. B. Morrison, O. C. White, I. A. Salmon, and W. M. Butler; a pneumatic mallet, by B.

Bannister ; an automatic mallet, by I. A. Salmon ; hand pressure and mallet pluggers, by S. C. Taylor ; an improved regulator for controlling the heat in making nitrous oxide gas, by F. Searle ; an automatic apparatus for the same purpose, by A. W. Sprague ; an improved pin for artificial teeth, by J. A. Mason ; pluggers, excavators, nerve instruments, &c., of improved patterns, by S. S. White ; extension bracket, with gas annealing lamp combined, by Buffalo Dental Manufacturing Company ; a compressor for closing flasks inside the vulcanizer, by G. Hays ; a porous duct compressor, by A. P. Southwick.

A few minutes were allowed Dr. McClelland, which he used in stating the good qualities of his base for teeth ; he threw a number of pieces to the ceiling, and about the room, to demonstrate their strength.

*Cosmos.*

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## EDITORIAL.

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### THE DENTAL ASSOCIATION OF QUEBEC.

It will gratify the friends of the Dental movement in the Upper Province, and, indeed, all who approve of the efforts made to elevate and advance our specialty, to learn that the acorn of progress sown in Ontario has sprouted a stem in Quebec, and that we now have two Dental Associations in the Dominion.

The results of legislation in Ontario have been placed before every dentist in Quebec, through the columns of this journal, and it was becoming a reproach that the Province which gave birth to the first dental periodical in Canada, could not organize an Association. The local circumstances, however, of the profession in the two Provinces differ somewhat, and the necessity for an organization in Quebec seemed less absolute than in Ontario. The smallness of our numbers in this Province, and the more limited scope for practice, could not as soon necessitate the associative principle, or develop the same necessity for legislation as in Ontario, where the members of the profession, having a larger field for labour, are more numerous. The raids of empiricism, and the issues of ignorance, have been far more extensive, too, in the Upper Province, and the general condition of things there was more favourable to organization.

Recently, however, the indications have been, that association and incorporation in Quebec are an exigency of the times, and a movement

on our part which our patients, the public, have a right to expect. The certainty of an invasion from the floating population of quacks, who most do congregate on the other side of the lines, and a transfer of the scene of operations from Ontario to Quebec of the empirics and incompetents who could not, or would not, comply with the requirements of the Ontario Act, demanded immediate action in Quebec, as a matter of protection to our own reputable practitioners and the public at large.

It is satisfactory to know that the profession of this Province are fully determined to preserve an equal standard of professional requirements with that of Ontario; and it is well for any who propose casting anchor in this Province, to know, that such change, in hopes of immunity from the provisions of Ontario legislation, will only bring them between two fires.

The sooner we are prepared to compel quackery to turn over a new leaf or abdicate, the sooner will the public appreciate the Dentist in his true light, and the sooner will Dentistry be elevated and improved as a profession. The principles of Dental associations strike at the very root of quackery; which must commend them to every intelligent and worthy practitioner. Their moral effect upon the operations of their members is unquestionable; they transfuse character and a fondness for knowledge, as well as the desire to excel. There is an inoculative effect produced on poor operators by witnessing the clinics of those more skilled; and there may be more truth than poetry in the theory of infusion of knowledge by association; as Charles Lamb believed he inhaled learning by walking through, and meditating in old libraries. The experienced are gratified to impart their learning, and the young are glad to imbibe; and if one has too high an estimation of his own abilities, the probability is that by association the delusion is soonest dispelled.

The objects of such associations must commend them to every patriot. In our New Dominion, it is important that every individual, no matter how humble his sphere, should be possessed with a sense of his individual responsibility as a citizen. The status of any calling, as a whole, is but the aggregate status of the individuals representing it, and the character and ability of the individual makes that of the mass. By improving our own sphere of labor, therefore, we fulfil our individual responsibility; and it is a common sense axiom that whatever tends to elevate and improve any one calling which, in the division of labor, forms a part of the grand system of work, reflects credit upon the country at large. With such a principle and such a theory before us, we will all aim at perfection, though we may not all attain it.

The difficulties in the way of an Association in Quebec are few and

insignificant. Disparity of numbers is a great advantage instead of an obstacle, and, providing that no local or national feeling be raised in anything connected with the organization, the Quebec Association must inevitably fulfil its objects. May the unanimity which characterized its preliminary meetings always prevail; and may a noble rivalry in all things worthy stimulate the two sister associations, and the work we are now doing for our profession be done so well and so thoroughly, that in future years, when we come to compare its state with what it was, our retrospection may be pleasant and congratulatory.

W. G. B.

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### THE CONVENTION AT HAMILTON.—AN EXPLANATION.

We regret to learn that not a few members of the profession in Ontario have construed our remarks in the last number on "The Convention at Hamilton" as a rebuke to those who moved and carried the vote of censure on the Board, and as a defence of the latter. One correspondent says, "You must know that certain members of the Association and the Board did wrong, and why did you not lecture them as well as the correspondents."

In answering this query, we trust we shall make an explanation that will satisfy every member of the profession that this Journal did not and will not apologise for the wrongs committed by any of the members of the Association or the Board, and that in every respect it is an independent organ.

When the offending editorial was written, and indeed until about two weeks ago, we were entirely ignorant of the vote of censure and had not the least suspicion of any such action. The portion of the Proceedings which appeared in the August number of the Journal, was the only part in our possession, until about two weeks ago, when the balance came to hand. It must be clear, then, that we did not rebuke those who moved and carried the resolution, when we knew nothing whatever about it. On the strength alone of the contents of the letters before referred to, the editorial was written, and we had not the remotest idea of any action of censure on the Board, as not one of the said letters intimated it, and no one informed us. We distinctly stated that the lecture was especially intended for "the correspondents," and "any inclined to the same method of resentment," viz., wishing to publish abusive personalities, without a shadow of fact or argument.

We make no retraction of a word in the editorial of last month; but would rather add to it by suggesting that the correspondents who favoured us with their vulgar fulminations, be ridden on a rail out of the next

Convention. We can make no retraction, because we intended no wrong; and if the editorial was liable to a double meaning, this explanation must satisfy our readers that in interpreting it as some did, they discovered a "mare's nest." And to assure doubters that this Journal is not controlled by the Board, individually or collectively, we desire to express our approval of the course taken by those who voted for Mr. Trotter's resolution. At the same time, in justice to both sides, we will say that we were never once asked to write up the views of the Board, nor to rebuke those whose views did not tally with theirs; and while, from our point of view, we should judge the sin which prompted the vote of censure, to be a sin of omission rather than commission, we decidedly sympathize with those members who were deprived of their franchise. W. G. B.

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### LOCAL ASSOCIATIONS AND A DOMINION ASSOCIATION.

With such example before them as set by the Provinces of Ontario and Quebec, it is expedient that the other Provinces of the Dominion should each follow suit and organize local dental societies. The matter is now comparatively easy, as the Ontario bill and the constitution and by-laws of the Ontario Association afford access for imitation, and the *Canada Journal of Dental Science* now exists as the advocate of the whole profession in Canada. Nova Scotia has equal facilities with Quebec for an organization, and equal necessity. With the extension of local societies we may come in time to consider the propriety of a Dominion Dental Association, and a Dominion Act. In the meantime, let us aim to ensure and extend the usefulness of the local societies in existence, and let the good they accomplish be their best recommendation. W. G. B.

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### TO THE MEMBERS OF THE DENTAL ASSOCIATION OF ONTARIO.

The publisher has consented to send this number to all the members of the Association, whether they are subscribers or not. The report of the Committee upon the Constitution and By-laws is in the hands of the chairman, Mr. J. H. Bryant, of Woodstock, who was authorized by the Association to have the by-laws printed in pamphlet form for the use of the members. The members will soon receive copies. The constitution was amended at the Hamilton meeting, so far as relates to the annual fees. Mr. Beers having kindly offered to publish the proceedings in full in the *Journal*, one dollar per year was considered sufficient to meet the other expenses of the Association.

The certificates of membership are filled up, and as soon as the signatures of the late president, and late corresponding secretary, can be obtained, which will be in the course of a few weeks, they will be forwarded to all the members, *incipient, active, and honorary*. It is hoped that the members will remit the small annual fee to the treasurer, L. Clements, L. D. S., Kingston, without delay, as a few old accounts, audited by the Hamilton session, have not been paid. The annual fee added to the subscription to the *Journal*, is only four dollars, the amount formerly paid by each member.

The Association has been successful in carrying a bill through the Legislature. The work that most thought would require five years to accomplish, has been done in less than half that time. This affords us cause for congratulation. On the other hand, the country and the profession have been taken almost by surprise. They are yet hardly prepared for the new order of things, and a little time must elapse before the prejudices of the public and the profession will subside.

In our own province, the medical profession are willing to recognise us as a branch of the healing art. In the province of Quebec, the profession of dentistry is looked upon by medical gentlemen, in many instances, as a thing beneath their notice. The recent organization of the "Dental Association of the Province of Quebec," will soon place our profession there in its proper form before other professions and the public.

Heretofore much time has been occupied at our meetings with business and criticisms upon matters that will not in future require attention. The *great* object, mutual improvement, can now receive more attention. It is hoped that members will not lose sight of the fact, that we now have a recognized organization, and that our strength lies in our being united. So far as the writer is concerned, he is desirous of retiring from the duties of his office, for two reasons: first, for want of time to attend to it properly; second, that the youngest member of the Association may feel that the older members do not desire to monopolize the offices.

Knowing that the formation of any other organization for the province, although, perhaps, not intended as antagonistic, would so be regarded by the public, the writer is willing to make any and every sacrifice, in reason, that this may be avoided, and that unanimity may prevail among us. Dentists of twenty years practice may feel, perhaps, out of place under officers of six to ten years standing; but such considerations are of no moment compared with the importance of sustaining the standing of the profession at home and abroad.

J. S. S.

Subscribers who paid for the Journal, and who received the circular enclosed in the last number, will please accept our apologies. In the hurry of folding and posting, it was enclosed in all the Nos. sent away, though only intended for those who have not yet subscribed.

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We commend the spirit of Mr. Trotter's essay in the present number to the earnest attention of every practitioner and student.

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We have to apologize to our subscribers for the lateness of this issue. Several unavoidable circumstances, and the desire to embody in this number the proceedings of the preliminary meetings of the Association of Quebec occasioned the delay.

We send this number to every dentist in Canada, but, in future, will only send the journal to subscribers.

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VICTORIA UNIVERSITY.—Attention is directed to the announcement of the Medical Department of Victoria University, for the session of 1868-9, to be found in our advertising columns. Lectures will commence at Toronto, on the first day of October next. Until we have a Dental College established, students in Dentistry will find attendance upon lectures in medical schools of great advantage.

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THE DOMINION MEDICAL JOURNAL.—Vol. I, No. 1, of the above journal is received. Published monthly at Toronto. Edited by L. Brock, Esq., M. D. It contains an original article by Professor Berryman, M. A., M. D., upon "Bromide of Potassium;" also articles as follows, by the editor: "Introductory," "Medical Education," "Benefits of Members of Professions," "Toronto Hospital," &c., &c.

Next to dental publications, dentists should subscribe for medical journals, dentistry being a branch of the healing art.

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## SELECTED ARTICLE.

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### NITROUS OXIDE IN ENGLAND.

BY J. H. M'QUILLEN, M.D., D.D.S.

It is somewhat surprising—if not, indeed, amusing—to observe by the English medical and dental journals, that the recent introduction of this agent as an anæsthetic to the dental profession of England (first by Dr.

W. H. Waite, of Liverpool, in a lecture before a chemical society of that city, and subsequently by Dr. Thomas W. Evans, of Paris, the latter not only visiting London expressly for that purpose, and demonstrating its applicability on various occasions, but, in addition, very liberally presenting to the Dental Hospital of London "one hundred pounds [\$500], to be used for the purchase of apparatus and materials to manufacture nitrous oxide gas," so that the agent might be thoroughly tested in that institution, has met with the most decided opposition on the part of a number of medical writers. The most prominent among these is Dr. B. Ward Richardson, well known as the discoverer of local anæsthesia by means of the ethereal spray, whose name has been frequently referred to in the most favourable manner in this magazine by the writer. Had this gentleman restricted himself to animadversions of the indiscriminate use of nitrous oxide on the part of ignorant and unprincipled persons (who have not only removed thousands of teeth which might have been saved for many years of valuable service, but, in addition, have placed the lives of those who have come under their hands in jeopardy, by using a potent remedy of whose composition they knew nothing, and therefore likely to employ an impure as a pure article, and in cases of impending death from its employment would be unprepared to meet such an emergency with any prospect of saving the life of the patient), there would have been much propriety in his objections. When, however, employing such strong language as the following (in italics), he indicates not only strong prejudice, but, in addition, a want of familiarity with its employment as an anæsthetic in the practice of surgery. At a recent meeting of the Medical Society of London, as reported in the *Lancet*, he remarked: "It was painful to see the childish excitement with which nitrous oxide and its effects had recently been dwelt upon. The gas had been treated as an unknown, wonderful, and perfectly harmless agent; whereas, in simple fact, it was one of the best known, least wonderful, *and most dangerous of all the substances that had been applied for the production of general anæsthesia.* No substance had been physiologically studied with greater scientific zeal or more rigid accuracy, *and no substance had been more deservedly given up as unfit and unsafe for use. It had caused death in the human subject,* and on animals it was so fatal that, with the utmost delicacy in its use, it was a critical task thoroughly to narcotise an animal with the gas without actually destroying life." What the mortality attendant upon its use may have been abroad I know not, and any cases reported there have not come under my notice. In this country, notwithstanding the thousands of times which it has been and still is employed (too often, alas!

as already stated, administered by the most ignorant quacks), but two fatal cases have occurred: in the first of which an autopsy revealed the fact that the lungs of the patient were perfectly riddled with tubercles, and in the second place death was caused by swallowing a cork placed between the teeth to keep the jaws open. This speaks volumes in support of the fact that of all anæsthetic agents this is evidently the least dangerous which can be used. With respect to its employment in connection with animals, having had no opportunities of observing its administration under such circumstances, I am unable to say anything; but the reference to them reminds me of a peculiar exhibition I witnessed when a student at the Jefferson Medical College, some twenty years ago. A much respected and deservedly eminent obstetric teacher, Prof. Charles D. Meigs, who had conceived a very strong prejudice against sulphuric ether, particularly in obstetric practice (and who frequently asserted that the pains of labour which a mother bore made her love her child the more, and that an obliteration of such suffering by anæsthetics would have a tendency to lessen maternal affection), informed the class one day that he would demonstrate to the students what a very dangerous agent sulphuric ether was, by administering it in their presence to some animals. An old sheep and a lamb were accordingly brought into the lecture-room, and after considerable trouble, the expenditure of much time, and by *cutting off the supply of atmospheric air entirely*, the young animal died, but the old one most obstinately and pertinaciously refused to do so, although most decided efforts were made by the attendants to induce suffocation, and continued for an hour and a half, when at last it was decided to let the poor creature alone. Notwithstanding the large amount of ether used, and the improper administration, the animal did not appear particularly affected by it.

It is matter of regret, for Dr. Richardson's own sake, that he should have assumed such a decided opposition to an agent which, in this country, has been employed with advantage, not only in minor surgery, but also in numerous capital operations. It looks very much indeed as if his judgment had been warped by a too fond regard for local anæsthesia. The experience acquired by him in connection with his observations on the coagulation of the blood should have induced more discretion than is manifested by the espousal of such a cause as opposition to the use of nitrous oxide. In the case referred to, after writing a most elaborate and apparently exhaustive work on the "COAGULATION OF THE BLOOD" (*the Sir Astley Cooper Prize Essay for 1856*), wherein it is stated most emphatically, as the result of carefully conducted and frequently repeated experiments, that the coagulation of the blood is due to the escape

of ammonia, he has said during the past year, with an honesty worthy of commendation and imitation, in a brief paragraph, that a more extended experience has convinced him that the conclusions then arrived at were erroneous and untenable. That he will sooner or later recognize his present position with respect to nitrous oxide is equally so, is fair to infer.—*Dental Cosmos*.

## MISCELLANEOUS.

It is estimated that at the six Dental Colleges in the United States, there were 400 matriculants, and 180 graduates in the session of 1867-8. The census returns of last year state that there are over 10,000 dentists in actual practice in the Union.—*Dental Office and Laboratory*.

In a village not sixty miles from Toronto, a young medical man issued a card, informing the inhabitants of N. and the surrounding country, that he had taken up his abode in their midst for the purpose of practising medicine; at the conclusion of the notice was his name thus:

\_\_\_\_\_, M.D.  
Physician, Surgeon, &c.

N.B.—All diseases of the Lungs receive special attention.

GOD SAVE THE QUEEN!

A professional antagonist, in the same village, thereupon issued a card, winding up his address as follows:

"Sincerely thanking his friends for their support, and soliciting a continuance of the same, Dr. ——— begs to intimate to them, and the public generally, that he is determined to devote himself *more untiringly* to the explanation of disease," &c. The italics are the Doctor's.—*Dominion Medical Journal*.

### NOTICE TO READERS, CORRESPONDENTS, &c.

Remittances of money, articles for publication, advertisements, and books for reviews, should be addressed to the Editor at Montreal. Money letters should be registered.

Contributions are respectfully solicited. Contributors will please write as legibly as possible, and only on one side of the paper.

*Exchanges*.—We would thank other journals to exchange with us *in duplicate*, and address to each editor respectively, in Montreal and Toronto.

*Advertising*.—We would call attention to the facilities offered by the journal for advertising.

Each subscriber receives the "Canada Dental Directory" *gratis*, at the end of each year. The names of subscribers and contributors will be published annually.

## STOCK FOR SALE.

I am now prepared to supply the profession with S.S. WHITE's or the STARR RUBBER, at \$2.50 per pound. Also ALUMINUM PLATE, at \$3 per ounce.

Sent to any part of the Dominion per Express. C. O. D.

G. V. N. RELYEA,  
BELLEVILLE, ONT.

THE  
CANADA JOURNAL  
OF  
DENTAL SCIENCE.

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VOL. I.]

OCTOBER, 1868.

[No. 5.]

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ORIGINAL COMMUNICATIONS.

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TREATMENT OF COMPLICATED CAVITIES.

BY W. H. WAITE, D. D. S.

Complicated cavities, as distinguished from simple cavities, are those in which there is a breach in the walls of the pulp cavity; complication consisting in the fact that some treatment of the pulp is called for, in addition to the ordinary treatment of the cavity of decay. As a rule, we hear of more or less pain in connection with these cases, sometimes spontaneous, and sometimes the result of chemical or mechanical irritation of the exposed pulp. The amount of pain, the character of the pain, and the apparent exciting cause of the pain, must all be considered, in deciding upon the treatment to be pursued. In cases where the suffering has been great, and the paroxysms cannot be traced to external irritation, we generally find considerable inflammation of the pulp. The first thing to be done is to afford relief. This can be effectually and permanently given by the application of arsenical paste,\* which

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\* The formula I have found most successful is that announced by my friend Dr. Flagg, of Philadelphia :—

Arsenious Acid, 1 part.

Acetate of Morphia, 2 parts.

Creosote, q. s.

To form a stiff paste.

I dip a bit of cotton in pure carbolic acid, then smear a portion of paste on it, and apply to the exposed surface. It seldom gives any pain.

destroys the vitality of the pulp in a short time. Whether relief, equally *effectual* and *permanent*, can be obtained in these cases, by any process of treatment intended to maintain the vitality of the pulp, is a question which still calls forth a great deal of discussion. Reliable information on such a subject can only be obtained through long and patient observation of the facts.

When exposure of the pulp has been very recent, (as in accidental exposure in excavating, &c.,) unattended with pain, except perhaps slight shocks produced by external influences, we have more favourable circumstances for preserving the vitality of the pulp. Dr. Atkinson, of New York, has published his mode of treatment, as follows: "He dries the cavity perfectly, applies creosote, and then a little oxychloride of zinc, of a creamy consistence, which is adapted as a cap over the pulp by gently tapping it while soft. In a moment this sets sufficiently to permit the addition of the balance of the oxychloride. This temporary filling may remain some weeks or months, the major portion then cut out, and the cavity filled permanently. Should the pulp be inflamed or painful on presentation, or during examination and removal of the softened dentine over it, he quiets it with creosote, chloroform, or other remedy, before inserting the cap and temporary filling. He does not remove the temporary filling because pain recommences in the tooth after its insertion."

This is, probably, the best treatment that can be adopted in the direction of preserving the vitality of the pulp; but even this is admitted by some practitioners of undoubted ability to be so unsatisfactory, in many cases, owing to the continuance or recurrence of pain after the operation, that they are glad to remove the oxychloride, and apply arsenical paste. From the diversity of opinion, it appears that, for the present, each individual practitioner must be guided by the circumstances of the case, as to which course of treatment he will pursue—carefully recording the facts, as a basis of future decision on the merits of each plan.

Devitalisation is followed by extirpation of the dead pulp—an operation requiring delicacy and patience. This, again, is succeeded by root-filling, either with gold, or cotton soaked in creosote and tannin, and then filling of the outer cavity.

Too much stress cannot be laid on the importance of extreme care and tenderness in exploring and manipulating these complicated cavities. It is sometimes difficult to ascertain immediately whether actual exposure of the pulp exists; we, therefore, have recourse to certain tests, of which there are three:—1st. That of *direct vision*, with or without the aid of a mirror. 2nd. That of *touching*, with a probe defended by a bit of cotton. 3rd. That of *thermal influence*, by letting a drop of cold water

fall into the cavity. In one of these ways, a response will be obtained, sufficient to guide the operator as to his subsequent course, and enable him to avoid inflicting unnecessary suffering on his patient.

10, Oxford Street, Liverpool, England.

September, 1868.

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## ULCERATED TEETH.

A CASE IN PRACTICE—BY A. C. COGSWELL, HALIFAX, N. S.

An officer in one of Her Royal Majesty's ships called to have the left second molar, upper maxillary, removed, having been the cause of considerable pain and uneasiness, beside the unpleasantness arising from a slight discharge, for several months. On examining, I found the tooth somewhat elongated, very black and discolored from a silver filling that had been placed there some months previous; tooth extremely sore to the touch, and the gum in the roof of the mouth directly opposite the apex of palatial root, very red and inflamed, quite soft, and spongy; so that a slight pressure with my finger not only produced severe pain, but caused a discharge of purulent matter; and on inserting a probe I found a free passage and actual sinus having been formed, and discharge having been kept up for several months past.

I must acknowledge I was very much inclined to remove it, but seeing a desire on the part of the patient to keep it a *little* longer, if it were possible to get rid of the *pain*, I remarked, "an empty house was better than a bad tenant," still, if he wished, I would try and see what could be done, feeling somewhat encouraged from the fact that the patient was a robust, healthy man, gums in good condition, and not *another diseased* tooth to be found among the entire number.

I at once removed the amalgam filling by drilling, which was rather painful, (but, thanks to a correspondent, I find his way of softening by using quicksilver, to act on the old filling the *best* and *easiest*), then taking a good sized barbed nerve extractor, succeeded in removing all the remaining portion of the dead nerve, about one-third of the whole, in the palatial fang, as well as a small portion in one of the facial roots—the third root cavity not sufficiently large to allow even the smallest barb to enter. I then used a solution of tannin and warm water, injecting it freely into the fangs, then with an untempered point (an old barb will answer if the barbs are filed smooth) carefully carried a thread of floss silk well saturated in creosote and iodine, far up to the apex of the roots, especially the palatial root, as that seemed to be the seat of disease,

allowing the end to reach the cavity in the crown of the tooth, so that it might be more easily removed—it being preferable to cotton, as there is not the danger of any fibres being left in. I then closed the crown cavity with cotton saturated in sandrach solution, and requested the patient to call in three days. At the expiration, I found the inflammation quite reduced in the roof of the mouth; discharge ceased; tooth not near as sore, and no pain since his first visit.

I at once removed the filling previously inserted; treated as before by syringing; placed the point of the syringe in the small opening in the roof opposite the palatial fang, and syringed well several times, forcing the solution as much as possible into the opening, and wiping the roots with creosote and iodine carried on a fine point far up; filled roots and crown again as before, requesting my patient to call in one week.

On examining this time, found all soreness had left the tooth entirely; gums and roof of the mouth healthy; could use the tooth same as the rest; opening in roof almost closed, scarcely perceived any trace of former opening. Desirous of testing it fully, I packed the root tight with cotton; also crown as usual, and allowed the patient to remain another week: came at time appointed; quite pleased at the success; tooth as useful as any other, and could use it quite as freely. I at once prepared and filled the roots the first day entirely with foil; and at a second sitting filled and built up the crown, using White's No. 2 crystal gold, requiring in the operation a little over half a box. The patient left quite satisfied that he had a good tooth and a small gold mine.

I had the pleasure of seeing the patient four months after, who called to tell me had had no trouble since the operation.

Why will not some other correspondent give us his experience, as this is *one of many*, I am happy to say I have been enabled to save. Hope our motto will be,

*Save when possible. Never say die.*

P. S.—Might I ask what fee a dentist is *justly entitled* to for such an operation. Will some one speak out?

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## IS THERE A THIRD DENTITION?

BY A. C. STONE, M.D., L.D.S., LONDON.

In the September No. of the Journal, I notice a reported case of *third dentition*.

It is said, with much truth, that "a thing of beauty is a joy forever," and surely a third set of dental organs constructed in nature's laboratory

must be beautiful to behold, and a source of intense enjoyment to the fortunate possessor : and, as if her cup of joy was not yet filled to the brim, this happy recipient of the *ivorys*, set in coral, is, as we are informed, at the mature age of forty-five (when most females have given up all hope of adding to the number of our population,) in that interesting situation which

“ Ladies wish to be who love their lords.”

Nature, sometimes, works in a mysterious manner, and the Doctor has, no doubt, acted wisely in not interfering with her operations, but has come to the conclusion to *wait and hope*.

I have yet to learn of one well authenticated case of third dentition at that age. It is true, some of the old writers, such as Bacon, John Hunter, Good, &c., mention cases as having come under their observation, and I believe Dr. McCabe, of Virginia, to be the only American writer who has recorded a case of the kind, and these were reported as occurring to persons at the advanced age of from three score and ten to one hundred and twenty, when they were just verging into that state described by the melancholy Jacques, as the last scene of all, “*sans teeth, sans taste, sans everything.*”

In my practice of over twenty years, I have seen a great number of supposed cases of third dentition, but found on investigation that they were only cases of retarded second dentition, sometimes caused by the too early loss of the deciduous teeth, and the consequent contraction, or rather want of proper development of the dental arch, whereby the permanent teeth were so much crowded that sometimes the cuspids, in others the lateral incisors and second cuspids, were wanting, and after some of the incisors or molars were drawn, lo, the last sheep made their appearance and were named teeth of the third dentition. The cuspidati of the superior, and the bicuspidi of the inferior jaw are very often retarded for years by the retention of the deciduous teeth. I have at present among my patients ten or more persons from the age of 20 to 50 years who have some of their deciduous teeth remaining in their mouths, and no doubt if the milk teeth were removed, those of the second dentition that should have occupied their places would make their way to the surface of the gums.

The teeth are formed in the alveoli, which are rows of cells coincident in number with the teeth; the bone composing the alveolus is porous, with thin edges surrounding the fangs of the teeth. When a tooth of the second dentition is extracted, the corresponding alveolus is absorb-

ed in a few months, and the jaw bone proper becomes a hard bony mass; consequently there is no place for new teeth to be formed, unless nature should be so kind as to supply a new sett of alveoli cells, an operation she seldom if ever takes the trouble to perform.

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## FILLING FRAIL CAVITIES.

BY W. GEORGE BEERS, MONTREAL.

In the variety of cases which come under the observation of the operative dentist, there is none that afford more scope for patient ingenuity and artistic manipulation than filling frail cavities with gold. When in addition to the frequent difficulties of access, excessive flow of saliva, and hyper-sensitiveness, we have frailty and friability of walls in a conspicuous tooth, the steadiest nerve and most delicate manipulation is imperative at every point of progress if the frail walls are to be preserved in their existing integrity.

In this connection we particularly refer to the incisors, cuspids, and bicuspid, as the broadest human grin seldom has more latitude; and the sacrifice of tooth substance for firm borders, beyond the latter teeth, is not only of less consequence for appearance sake, but most often indispensable for the success of gold operations.

It is easier, and to some, more tempting because easier, to extract a frail incisor and replace with an artificial substitute, or to sacrifice tooth substance for firm borders, and perhaps "building out;" but we consider the preserved natural shell of a conspicuous tooth, well filled, infinitely preferable, and more attractive than the most superb specimen of building out ever performed. No one can justly ignore the real science and art of restoring broken angles and fractured crowns with gold, but we are aware of several instances where natural incisors shells, which were capable of preservation, were partially sacrificed to a mania for this operation. Such a tendency should be carefully avoided; for however fashionable the operation may become, nature is superior to art; and a good shell of a conspicuous natural tooth, if possible of preservation, is preferable to any artificial substitute, whether it be of gold or porcelain. Where science and patient taste preside over the manual execution, the results of filling these frail cavities with gold will be more often satisfactory. The danger of fracturing friable enamel when introducing the filling, and the belief that good work cannot be done beside thin borders, leads many to cut away more than is always necessary, but there is a simple way to strengthen the thin walls while filling, and past successes are proof that

where such a cavity has ordinary fair play, and where the act of mastication does not bear directly upon the frailty, the shell may nearly always be well filled and preserved, for a sufficient length of time at least, to merit the undertaking. In cases of approximal cavities in the eight teeth particularized, where the walls near the orifice are mere enamel, and the movement of the excavator can be seen through one of the walls, we deem the majority of such cases worth our best efforts to save intact. There are very few patients who prefer losing any angle or part of a natural tooth if it can be saved, even for an indefinite time; and while there are cases of frailty where parts of the enamel are so entirely cracked and jagged that they cannot possibly last out the easiest pressure, we prefer removing any such pieces, and filling out flush, rather than removing the entire wall to get a straight border. Any border, however diagonal, can always be made smooth.

The first principle in filling very frail cavities, after the tooth is prepared, is to adapt a temporary shell of plaster of Paris, or gutta percha; or in particularly thin cases an impression of the tooth and adjacent parts may be taken and a shield made of cheoplastic metal, as suggested by Prof. Taft, to the natural walls, as a support against pressure, allowing it to extend to the adjoining teeth so as to be immovable during the operation, and so as not to interfere with free access and light. By covering the gum above and behind the teeth, it helps to prevent exudation of saliva. If gutta percha is used, the kind sold for pattern plates for models will not answer as well as the grayish white or brown material used for bougies and catheters, and which while pliable in hot water, and easy of adaptation, is as hard as wood on cooling, and may be removed from around the frail walls by a heated plugger.

Smooth margins are as necessary for frail as for firm borders; indeed more so. Sharp edges should be bevelled off.

We recently saw a case in point which we successfully filled ten months ago, and which may afford some suggestions for particular cases, though not for all. The case was a superior right cuspid, decayed so extensively on the posterior approximal side as to leave a mere lamina of enamel entirely deprived of dentine on the labial and palatal walls. The patient was averse to extraction, or excision and pivoting, but preferred either to partial excision and building out with gold. A small cavity, the size of a pin's head, had almost worked its way through a natural indentation in the left side of the cusp, into the cavity proper. The nerve was healthy and comparatively well protected. The orifice was larger than the cavity within.

A straight and smooth border was first obtained, and following the

rule never to cut into the enamel for retaining points, we excavated at the upper part of the dentine. The hole in the left side of the cusp was then drilled through and enlarged, so as to admit easily a stiff gold wire, four sided and jagged. One point of the wire was then touched with oil and rouge, put through the hole, and pressed upward until it touched the upper surface of the cavity, to the right of the nerve chamber. At the mark left by the rouge a pit was cut, large enough to admit the head of the wire, and deep enough to retain it in place. It was then cut the length required,—sufficiently short to allow of the insertion of a gold foil plug in the cusp cavity, to render the latter impermeable to fluids. The head of the wire was jagged a little, the better to assist in retaining it in place and was pushed into place. The outward protecting shell of gutta percha, was then moulded around the cuspid and adjoining teeth, covering the cusp cavity as well. When this shell was perfectly hard, the cavity was dried, and the packing commenced by fastening the wire above and below with small pellets of gold. The support of the wire afforded a bridge which compensated to some extent for the loss of dentine at the borders, and the consequent absence of any of the usual shaping. Adhesive foil No. 3 was used entirely in thin ribbons and strips, the better to carry the layers to the thin walls, and to obtain a greater degree of density. The cavity was thoroughly and tightly packed, without any fracture of the enamel. A very prominent cusp of the lower bicuspid was filed off sufficiently to prevent antagonism in closing: the gutta percha shell was removed and the hole in the cusp filled with a couple of pellets of foil.

The operation was tedious and prolonged, but it has proved a success so far, and with an ordinary amount of care and cleanliness will, we trust, subserve its object.

We may state *en passant*, that this cavity had been twice filled previous to this operation, and before the cusp hole appeared; the last operation costing \$50 in New York.

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## CORRESPONDENCE.

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### CANADA COLLEGE OF DENTISTRY.

*Mr. Editor,—*

I feel quite sure that it will be a matter of general congratulation among the young dental practitioners and dental students of our new Dominion, that they now have an opportunity presented to them for pur-

suing their studies in a systematic and legitimate way ; in fact the only way to secure a thorough and proficient knowledge of dentistry.

We see on every hand among other professions of the day a certain course of instruction to be followed out, and a certain standard of knowledge to be acquired before the young aspirant is considered competent to enter upon his professional duties, and I therefore consider it encumbent upon us who have passed through the fiery ordeal, and have from long years of hard labour possessed ourselves of experience and opportunities, (now that the way is clear), to immediately establish an institution which will in every respect meet the wants of those who are really thirsting for knowledge, and who are not only willing but eager to drink from the fountain thereof.

Dentistry has long since become necessary towards ameliorating the sufferings of the human family ; and considering the growing importance of it as an art, and the increasing demands for the services of the dentist from year to year, it is time, Sir, that the rising dentist should be educated in a manner commensurate with his calling.

We cannot expect, neither do we deserve, to be considered on a par with other professions, until we have instituted a curriculum of studies and appointed a staff of Professors equal in attainments and respectability to other educational institutions.

And I am happy to say that a majority of the Board of Examiners, and a large number of both the medical and dental profession, desire that a college be at once established for the education of young men who purpose to follow dentistry as a profession.

With this encouragement before us a further delay is unnecessary, except to give the student sufficient time to make such preparations as will enable him to be in attendance at the opening of the college. Students will have the privilege of attending both the Medical Colleges of Toronto in connection with the Dental College. Every facility will be given them to thoroughly perfect themselves, not only in dental anatomy but the whole human frame if they desire ; and a prompt attendance through the whole session at the dissecting rooms will be expected by the Faculty. By the arrangements we have made, our facilities will equal many of the first class Dental Colleges in the United States, and I beg to say we are particularly fortunate in securing the distinguished services of Prof. Croft, Dr. Berryman and Dr. Rowell—sufficient to show, Mr. Editor, that the best interests of the student have been seriously considered, and I trust that our efforts will fully meet the highest anticipations of all who are interested in the *Canada College of Dentistry*.

GEORGE L. ELLIOT,

*Dean of the Faculty.*

## PROCEEDINGS OF DENTAL SOCIETIES.

## ONTARIO SOCIETY OF DENTISTS.

A meeting of Dentists was held at the Rossin House, Toronto, October 13, 1868, for the purpose of organizing a society for the discussion of scientific and practical professional subjects, and matters pertaining to the general interests of dentistry.

Mr. J. W. Elliot was appointed Chairman, and

Mr. R. G. Trotter, Secretary.

Mr. Chittenden said he considered it very desirable to proceed at once to organise a society for mutual improvement and the discussion of dental subjects.

A. C. Stone acquiesced in what was said by Mr. Chittenden.

Moved by W. C. Adams, seconded by J. C. McCausland :

That we proceed at once to organize a society.—Carried.

Moved by R. Trotter, Guelph, seconded by M. E. Snider :

That the Society be called "The Ontario Society of Dentists."—Carried.

The following officers were then elected :—

A. C. Stone, M.D., London, President; J. W. Elliot, 1st Vice-President; C. S. Chittenden, 3rd Vice-President; R. Trotter, Guelph, Recording Secretary; D. Pentland, Corresponding Secretary; W. C. Adams, Treasurer; Messrs. Snider, McCausland, and R. G. Trotter, Executive Committee.

After which, on motion, the subject of extraction of temporary teeth was taken up for discussion.

Mr. Chittenden considered it a matter of great importance, and one in which most parents were interested. He said those teeth were often extracted as soon as they give pain; a practice which he considered very wrong. They may be filled so as to preserve them till the time for the eruption of the permanent ones. If the nerves are exposed he treats them and afterwards fills. Considers the premature removal of the temporary teeth shortens the jaws and causes the permanent teeth to be irregular.

J. W. Elliot thought it important that temporary teeth should be preserved till the proper time for their removal, but at the same time considered that they were often kept too long. Is influenced in removal of the temporary by the state of development of the permanent teeth.

J. C. McCausland admitted the correctness of the remarks of the last speaker, but is strongly in favor of filling temporary teeth—has frequently filled teeth for children three years of age.

W. C. Adams fully agreed with the remarks already made, but thought that we ought to go further than filling. We ought to instruct parents as to the proper food for children. If sufficient attention was given to this, he was satisfied that there would not be so much necessity for filling. He considered prevention better than cure. Such food as will make good bony structure is what is required. Fine flour is against making healthy bone. The best material for making bone is thrown away in bran and shorts.

Mr. Chittenden said that washing the mouth with a solution of the carbonate of soda would have a tendency to prevent teeth decaying, by neutralizing the acid that comes in contact with them.

R. Trotter considers the premature decay of the teeth was owing to a negative more than a positive cause, as an usual thing; the teeth on this continent are defective in constitution and are not capable of resisting the action of the agents to which all teeth are exposed.

M. E. Snider was in favor of filling temporary teeth.

R. G. Trotter gave several cases of regulating children's teeth.

D. Pentland uses every effort to preserve and retain temporary teeth until the permanent ones are ready for eruption.

The meeting then formed itself into a committee of the whole on a draft of Constitution and By-laws, which were adopted and signed by members present.

Letters of apology and sympathy with the organization were read from F. G. Callender of Cobourg, J. Bowes, Hamilton, H. Nelles, London, J. B. Wilmot and others, for non-attendance. After which the meeting adjourned, to meet again on the call of the President.

R. TROTTER,  
*Recording Secretary.*

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## PROCEEDINGS OF THE DENTAL ASSOCIATION OF QUEBEC.

The meeting of the above organization for the adoption of a Constitution and By-laws, and Act of Incorporation, was held by invitation at the residence of the President, A. Bernard, Montreal, on the evening of the 28th inst.

The following members were present: Messrs. Bernard, Belle, Brewster, Bazin, Leblanc, Davis, Alloway, Matthieu, Chase and Beers, of

Montreal; McKee, Quebec; Lefaiivre, St. John's; Brodeur, St. Hyacinthe. Apologies for absence were received from Dr. Trestler, Montreal, and Dowlin, Sherbrooke. A. Bernard in the chair. The meeting was favoured with the presence of the Ed. Carter, Esq., M.P.P., Montreal; A. W. Ogilvie, Esq., M.P.P., Montreal; and Alex. A. Stevenson, Esq.

The minutes of former meeting were read and confirmed.

A draft of a Constitution and By-laws was submitted, discussed clause by clause, and finally adopted with several amendments.

#### THE PRESIDENT'S ENTERTAINMENT.

After the business of the Association was over, A. Bernard invited the company present to partake of the hospitality of his house, in honour of the organization of the society. A *recherche* and tempting dinner surprised the members. A. Bernard presided, assisted by H. Davis. Mr. Carter, M.P.P., on his right; Mr. Ogilvie, M.P.P., on his left.

After full justice had been done to the good things so bountifully provided, the following toasts were drunk:

*The Queen*—God bless her! We all, said the Chairman, take pleasure in honouring our Queen, not only as our sovereign, but as the amiable, virtuous, and Christian woman.

Drank with cheers.

*God Save the Queen*—by Mr. Stevenson.

*The Governor-General and the Dominion of Canada*—The chairman referred to the excellencies of the Governor-General, and to the prospects of the Dominion.

Drank with cheers.

*The Lieut.-Governor of Quebec*.—The chairman said, he was proud and glad that the old Province of Lower Canada, inhabited chiefly by French Canadians, had in this age of freedom, of thought, and of civil and religious liberty, been permitted to select a governor of their own country.

*Song—A la claire fontaine*—by Dr. Lefaiivre.

*The Legislature of Province of Quebec*—coupled with the names of Messrs. Carter and Ogilvie. The Chairman was gratified by the presence of Messrs. Carter and Ogilvie. Not alone for any particular advantage they could render the Dental profession in the objects in view, but because they are honoured for their private worth and ability. The invitation to them was verbal, and quite impromptu, and he was sure the meeting would appreciate their kindness in attending.

Mr. Carter responded, expressing his pleasure at being present and the interest he took in the object of the Association. He was not aware until

then that the Dental profession had assumed such importance. He felt legislative action on their behalf to be a subject of urgent necessity, and one deeply interesting to the public.

Mr. Ogilvie was gratified to meet the representatives of the Dental profession, and to see it represented by so many intelligent gentlemen, and led by one who had made his mark as a practitioner and a citizen. He was pleased to see the French Canadians present, and referred to the good treatment received by the English minority in Quebec, at the hands of the French.

*Our Host and Hostess.*—C. Brewster, in proposing this toast, referred to the efforts for legislation made by the President, when the Parliament House was burned in 1844. He was always a leading man in the profession, and by appointing him their President, the Association felt they had the right man in the right place. He referred to the progress made by the profession in Canada; to the comparative newness of Dentistry in this country, and its future hopes and aspirations.

The Chairman, in responding, thanked the company for the handsome manner in which the toast had been drunk. In reference to his position as a Dentist, he knew he was the oldest practitioner in Canada, and he thought on the continent, having practised for 35 successive years. He attributed his success in practice to his having been always guided by the principles of respect for himself and respect for society. He had always endeavoured to do his best, and though he had sometimes failed for want of knowledge, of advantages, and of time, he was always guided by honest intentions.

It afforded him much pleasure to have the first regular meeting of the Association for the adoption of the Constitution, in his own house. He was willing to bestow all the knowledge he possessed for the benefit of those who cared to receive it. He advised the members to sustain the Association, to read and study the current Dental periodicals and works of the day. He thanked then on behalf of Mrs. Bernard. She was always gratified when such honour was conferred upon her husband and her house.

We regret that we cannot give Mr. B's. eloquent speech in full.

*Alex. A. Stevenson, Esq.*—The chairman begged leave to propose this toast. Mr. S. was a citizen whose public services and private worth were known to all.

Mr. Stevenson thanked the members for drinking his health, and after a few remarks, humorously related his first experience of Dentistry, and the vain efforts made by a druggist in Wellington St. to extract a molar for him. Three successive twists and tugs were given, but no tooth came.

It was started, however, and the pain ceased, but always afterwards this molar was in the way of closing the jaws, as it was raised a quarter of an inch above the others. It remained so five years, and finally got its final pull in forty slivers. His last experience of Dentistry was so pleasant that one would almost wish to have the toothache to get a seat in the easy chair of the Dentist of to-day.

Song—by H. Davis.

Mr. Carter proposed *Success to the Dental Association of Quebec*. He felt that this movement would place Dentistry in this Province on an equality with the other professions, and that incorporation would be welcomed by the public.

Mr. Bernard responded and related the circumstance referred to in connection with the early efforts to legislate for Dentistry. There was a medical bill before Parliament, and he sought to get a clause into it to regulate the practice of dentistry. He, with some others, went before a committee appointed by the House, and secured all they wanted. The bill was to be brought before Parliament the next day, but the next day the House, with the bill in it, was burned down. More recently, vigorous efforts were made by Mr. Brewster and others, to get a bill for the whole of Canada, but the profession did not support it. The present condition of affairs was brought about at a happy time. Mr. B. referred to the success of the movement in Ontario, and to the interest with which the profession of Quebec regarded it. He regretted that Dr. Trestler was absent—a gentleman who had done much for the elevation of Dentistry. He referred to the *Canada Journal of Dental Science*, and the good it was doing, and called upon Mr. Beers to respond.

W. G. Beers briefly referred to the impetus given to Dental progress in Ontario and Quebec. He had assumed no small labour and responsibility, and hoped he would be supported.

C. Brewster, on being called upon, referred to the modesty of the members in refusing offices and honours. He congratulated the Association on the absence of quarrelling and jealousy, and hoped the members would put their shoulder to the wheel and do their utmost to advance the objects of the Association.

Mr. Ogilvie addressed a few words in French to the French Canadian members present.

Mr. Carter followed in French.

Dr. Lefaiivre thanked the members on behalf of the French Canadians, for the kind expressions. French Canadians have a position to fill towards the Association, and will endeavour to do it. Our literature, though English, will receive encouragement, and in any other

department needing encouragement, we hope to merit the good will of our English friends.

Mr. Leblanc sung: "*Malbrough s'en va en guerre.*"

The Chairman proposed the health of Mr. McKee, of Quebec, an old practitioner whom he highly respected, and who had taken an active interest in the organization of the Association.

Mr. McKee was glad to see the advancements made, and the determination to progress still further.

Mr. Brodeur, St. Hyacinthe, on being called upon, said he hoped to profit very much by his connection with the Association.

J. A. Bazin, in response to a toast, alluded to the principles which should guide Dental practitioners. He alluded very happily to his old connection with the President as assistant, and attributed his success so far to his invariable determination to do the best he knew how. He endeavoured to work well in secret and openly, and to do the best without consulting the pocket.

H. Davis, on being called upon, made a few remarks concerning the kindness and generosity shown him by Mr. Bernard.

Several other toasts were proposed,—the "Dental Association of Ontario," &c., and the company enjoyed themselves up to an early hour in the morning, when "Auld Lang Syne," "*Vive la Canadienne*," and "God Save the Queen," were severally sung, and the meeting broke up, much pleased with the generous entertainment of their host and President.

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NOTES FROM THE PROCEEDINGS OF DENTAL SOCIETIES.—*Odontographic Society of Pennsylvania*.—A meeting of this Society was held on Sept. 1. Prof. McQuillen introduced the subject of nitrous oxide gas, and expressed his surprise that Dr. Richardson (the discoverer of local anæsthesia by means of spray) should speak of this gas as "the most dangerous of all the substances that had been applied for the production of general anæsthesia. That it caused death in the human subject, and on animals it was so fatal that with the utmost delicacy in its use, it was a critical task thoroughly to narcotize an animal with the gas without actually destroying life." The speaker then went on to say, that in this country nitrous oxide gas has been administered to more than 27,000 persons, and that but two fatal cases had occurred, in the first of which an autopsy had revealed the fact that the lungs of the patient were perfectly riddled with tubercles; in the second case death was caused by swallowing a cork placed between the teeth to keep the jaws open. This speaks volumes in favour of the fact that of all anæsthetics this is evidently the last dangerous that can be used. With respect to its employment in connection with animals, having had no

opportunities of observing its administration under such circumstances, I am unable to say anything, and propose this evening to try the experiment whether animals can be "thoroughly narcotized without destroying life." I have provided for this purpose two rabbits, a cat, and two frogs. If their lives are not destroyed by inhaling the gas, it will prove Dr. Richardson's assertions to be incorrect.

With the assistance of Drs. Ellis and White, Prof. McQuillen now proceeded to administer the gas to a rabbit, which in one minute and a quarter was completely under the influence of the anæsthetic, with the exception of a slight breathing, showing no sign of life when lifted up and thrown upon the table. After remaining in this condition about two minutes it began to show signs of returning consciousness, and in a short time was hopping around as lively as ever. The second rabbit and the cat were tried with about the same result. The Prof. then filled a glass jar with water, inverted it in a basin of water, inserted a tube from the gas bag under the jar, and forced in the gas until it displaced the water. A frog was then introduced into the jar, and allowed to remain about half of an hour without any perceptible effect being produced. The other frog was enclosed in a bladder which was secure to the mouth of the bag and filled with gas. This experiment was more successful than the previous one, but although partially narcotized, it recovered almost immediately upon being removed from the bladder.

Dr. Ellis made a few remarks upon the dark appearance of the lips of patients when inhaling nitrous oxide. He did think it was caused by carbonic acid, as he was satisfied from some of the experiments that had been made, that the amount was so small, that the effect was not perceptible, but suggested that in some instances it might be caused by the presence of the fingers upon the lips, to keep them in contact with the mouth-piece.

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## EDITORIAL.

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### TO OUR SUBSCRIBERS.

In view of an important change in the Journal, and the better to remedy some existing impediments to its regularity, we purpose deferring the appearance of the next number until January; when, with fresh vigour and general improvement, we trust it will compensate our subscribers for the temporary cessation.

In the meantime we ask our friends not to relax, but rather to increase their exertions in our behalf. The larger our subscription, the sooner will the Journal be enlarged and improved.

## CASH vs. CONGRATULATIONS.

The complacency and condescension with which some Dentists speak and write of the *Canada Journal of Dental Science*, is certainly at times amusing as well as aggravating. They commend its objects; approve of its general design; utter fine sentiments about its mission, and finally, "hope it will succeed;" but the trouble is that they fail to see the applicability of these remarks to themselves; and while generous to a fault with compliments, they are deaf as a beetle when asked to subscribe. We have a word or two to say to such well-wishers.

Panegyrizing, however sincere and sympathetic, never yet paid the printer; and we would infinitely prefer \$3 in bills or silver (we were going to say or *copper*) than whole files of congratulatory letters, or unlimited verbal expressions of approval. One may suspect the sincerity of the latter; but the former is too substantial to be mistaken. We would like to form the acquaintance of a printer who would take congratulations as pay. We should cherish a lively friendship for him, and give him most liberal patronage.

But with seriousness, we beg to reiterate, that cash and not congratulations is what is necessary to sustain this or any other periodical. The responsibility and labour we have personally assumed in publishing this journal is neither a sinecure nor a recreation. The time devoted month after month to bringing out the successive issues, is by no means trifling. This responsibility and labour we gladly shoulder, however, "for the good of the cause;" and all we ask,—it is surely not much! is that the members of the profession in Canada, respectively contribute but twenty-five cents per month, in one yearly or two half-yearly instalments in advance, as their subscription towards sustaining and encouraging this, the only Dental Journal in the Dominion. There is not one practitioner or student in the country, but can easily afford this trifling amount, and we trust that this may be the last appeal required before our coffers overflow, and publisher and printer go on their way rejoicing.

We have the name and address of every Dentist in Canada; to every one of whom we have regularly mailed the five numbers of the journal. This cannot be done for nothing; and we trust that our friends will stir themselves in this matter, and remit without further delay. Some have refused to subscribe because they believed the journal to be the organ of the Board of Examiners of the Province of Ontario; others because they would like to wait, "to see how it succeeds;" others for divers reasons. We trust these fears have been now removed.

Let every intending subscriber remember the motto: *Bis dat qui cito dat*;—He gives twice who gives promptly; and let there be more liberality and more spirit.

## A DIFFICULTY REMOVED.

An impression having gone abroad that this *Journal* is the organ of the Board of Examiners of the Province of Ontario, and two dentists of Ontario having written the publisher that such an impression would serve to render the journal unpopular among dentists dissatisfied with the actions of the Board, the undersigned, being a member of the Board, deemed it his duty to retire at once from any connection whatever with the *Journal*.

In taking this step the writer wishes it distinctly understood, that the most friendly relations exist between himself and the publisher, and that the *Journal* will still receive his hearty support.

J. S. SCOTT.

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"A YOUNG PRACTITIONER" must excuse us from inserting his communication. Besides being anonymous, some parts of it are too personal; and the want which prompted his letter has been supplied since he wrote.

An old gentleman, a little "daft," for whom we were lately repairing a rubber plate, gravely suggested the brilliant idea of economizing cast off rubber shoes, by using them for dental purposes in connection with mechanical work! We commend this to the attention of those Dentists who make full upper sets for \$12.

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We have to acknowledge the receipt of several valuable Medical Journals in exchange.

"The Canada Medical Journal," edited by Drs. Fenwick & Campbell, Montreal (monthly, \$3 a year;) Provincial Medical Journal, published at Halifax, N. S., (quarterly, \$1 50 a year); the Medical and Surgical Reporter, published at Philadelphia (weekly, \$5 a year); Boston Medical and Surgical Journal (weekly, \$4 a year); Pacific Medical and Surgical Journal, published at San Francisco (monthly, \$5 50 a year); Lancet and Observer, published at Cincinnati (monthly, \$3 a year.)

*The American Journal of Dental Science* suggests the organization of a Southern Dental Association; one confined to the late slave holding

States, and which would meet in one of those States. "The impression has become general among Southern Dentists that a *sectional feeling* governs the action of the majority of the members of the American Dental Association; and on account of such a feeling as this being manifested at every meeting, they decline attending."

We regret to hear of any such *political* feeling arising to sever the connection between American Dentists in the American Dental Association. The eminently practical character of its conventions, and the respectability of its officers have made it an institution of great value and we have always believed "the majority of its members" to be guided by a liberality which was never yet openly disputed, and a *loyalty*, which, if we commend in our country, and in our own associations, we must consistently commend in the neighbouring country and the American Dental Association.

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### ADVERTISING.

Dentists having spare operating chairs, instruments, &c., to sell, or in want of assistants, or partners, will find the Journal the cheapest and best medium for advertising.

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### REVIEWS.

*Taft's Operative Dentistry*, second edition, 423 pages, with 86 illustrations. Published by Lindsay & Blakiston, Philadelphia, 1868. (\$4.50).

This admirable text book is now in its second edition; and as the latest and most special contribution to operative dentistry, is of incalculable benefit to the student or established practitioner. The many changes which have taken place in a short space of time, in the principles and practice of operative dentistry, have necessitated in this special department some more modern guide than Harris; and we have not yet met with anything which better filled the void than the above work by Prof. Taft.

Forty-seven pages, and six new illustrations have been added to this edition, and the labour of author and publisher made more creditable to both.

Chapter I. contains short, well arranged articles on calcareous deposits,

irregularity, atrophy, exostosis, denuding, chemical abrasion and necrosis of the teeth. The article on irregularity, however, by no means does justice to the subject.

Chapter II. contains articles on the predisposing and exciting causes of caries, comparative liability to decay, consequences of decay and treatment of caries.

Chapter III. contains general remarks on filling, materials used, &c. The author gives the following as the inventor's formula of "Hill's stopping:" "With pure gutta percha in a plastic state, are mixed quicklime, two parts, and quartz and feldspar, one part each, which latter are reduced to an impalpable powder, and kneaded into the mass as long as it will receive them without becoming brittle."

Chapter IV. relates to instruments used in filling; from chisels, drills, and excavators, to pluggers and files.

Chapter V. discusses separation of the teeth, and recommends immediate separation with wooden wedges, in preference to the gradual process with rubber.

Chapter VI. is an excellent series of articles on examination, opening, removal of decay, forming cavities, drying cavities, introducing the filling, cylinder or block filling, the mallet, crystal or sponge gold, and finishing fillings.

Chapter VII. enters into practical detail on filling by classes and modifications.

Chapter VIII. relates to Pathological conditions.

Chapter IX. describes the treatment and destruction of exposed pulps, filling pulp cavities and canals, filling roots, dental periostitis, alveolar abscess.

Chapter X. relates to pivot teeth, fitting the crown, attachment of the crown, metallic pivots.

Chapter XI. on general remarks on extracting teeth, describes the indications for this operation; the different instruments used, and conditions to be observed in extraction.

Chapter XII. on accidents in extracting teeth.

Chapter XIII is devoted to anaesthetics.

From this cursory review it will be seen that Prof. Taft has laboured to present a standard work. In our humble opinion he has succeeded, and deserves not only mere thanks, but what pleases an author most of all, a great many attentive readers. As a preparation for practice, this work is invaluable for students, and as a companion to practice for the experienced, there is much in its pages to instruct those who are not above learning in their old age.

*Robertson on Extracting Teeth*, second edition, 188 pages, illustrated. Published by Lindsay & Blakiston, Philadelphia, 1868. (\$1.50.)

There can be no better way of developing and perfecting any science and art than by competent men devoting themselves to its study and exposition in separated specialities. While not ignoring the general connection and the relation of one part to the other, the whole is sooner made perfect, and each branch better understood, when studied in parts by concentrated minds. Such manuals as this of Dr. Robertson's, devoted exclusively to one special branch, are just the need of dentistry, and we hail it with pleasure. The list of contents comprises: introductory remarks, anatomy of the jaws and teeth, Pathology of toothache, instruments used for extracting and proper method of using them, lancing the gums, accidents and their remedies, and anaesthetics. Every subject is clearly and concisely reviewed, and excepting, perhaps, an exaggerated condemnation of lancing the gums as a rule, the general principles of the work are such as must commend it to the attention of the profession. We think, however there is much room for enlargement, as the subject is one of importance, and the operation is more practised than perfected, both as regards the form of instruments used, and the conditions of toothache which demand the *dernier resort*.

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I. *Why Not?* A book for every woman. II. *Is it I?* A book for every man. III. *On Nurses and Nursing*. By Dr. Horatio R. Storer, Boston.

No better proof of Dr. Storer's abilities can be required, than that experienced graduates of medical colleges, long after they have obtained their sheep-skin, are eager to sit at his feet and pay a high fee for a short course of lectures on the Surgical Diseases of Women. His reputation as a gentleman of high moral principle and rare practical experience gives a tone to whatever he writes, and for this reason we highly commend the above productions of his pen, which he has favoured us with.

The first volume is designed for popular reading, and lays the scalpel of criticism and exposure to a sin unfortunately too prevalent in the neighbouring country—criminal abortion. So destructive has this crime been to the native American population—already by no means of average stamina—that the number of foreign births is greatly in excess of the native ones; and the possibility is, that unless it is counteracted, the pure "Yankee" will one day be a nonentity in his own country.

The second work is a comparison of the former, and relates principally

to marriage and other matters of vital interest to every man. It will tend to remove some wrong impressions of the relations of the sexes, and contribute much to the happiness of homes and the best interests of society.

The title of the third work denotes its purport.

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## SELECTED ARTICLES.

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### ARTISTIC OR EXPRESSIONAL DENTISTRY.

BY J. T. CODMAN, BOSTON, MASS.

*Read before the Massachusetts Dental Society.*

The term "expressional," applied to dentistry, is new; yet I have found no name which better serves my idea of what is intended to be conveyed by it, viz., the preservation of the expression of the features after the loss of teeth, or the restoration of the normal expression or a better one on the insertion of artificial teeth.

That the *general* mode of inserting substitutes for the natural teeth does not restore or preserve the best expression of the faces of our patients, scarcely admits of an argument. That there are dentists who make an exception to this rule is happily true, and that great general progress has been made in the past ten years toward that desirable end is also true; but that better results are attainable is certain. Doubtless, if dentists understood more of the philosophy of expression, they could attain pleasant results where they have made many failures.

That the extracted teeth are, to a considerable extent, safe guides for the form, colour, size, and shape of the new set is true; yet many cases present themselves where the arch has been overcrowded, and where the insertion of a full artificial set would be impossible without distending the lips and making a bad expression. In such cases it were better to omit some of the teeth, lessening the number, and insert teeth of nearly the natural size.

Among the prominent failures in the expression of the sets of the present day is that of,—1st. Colour—by which they are often detected at once. 2nd. Length—being often too long, and sometimes too short. 3rd. Size of the teeth—often too large, and often, of late, too small. 4th. Deficiency of form of each individual tooth, or what is called "want of character," from lack of curved lines. 5th. Want of prominence and

length of the eye teeth. 6th. Too great length of the back teeth, especially in upper sets. 7th. Too much evenness or similarity. 8th. The size of the arch—often too large or too broad, sometimes very much so. 9th. The horizontal line, or line of occlusion, is too straight, often looking as though both sets were made together on one piece and cut apart with a knife.

Turning from this dismal page of failures, let us give a momentary glance at the expression of character as shown in the teeth and physiognomy of animals in connection with man; for being all revelations of one power and parts of one system, they must all bear some analogy to each other.

How often we have all enjoyed the pictures of animals dressed as human beings, exclaiming "Capital!" at these burlesques on humanity. But it is not the picture that burlesques—the animals themselves do.

That the physiognomy of the lower animals and that of man bears the same imprint may be brought to mind by the fox with his sharp-pointed teeth, his narrow dental arch, neatly covered with his trim, delicate lips. Observe how meek and quiet he looks, with his twinkling eyes half shut and his nose over his paws. Now arouse him with a rod, and how his whole expression changes; his second nature—his savage side—is uppermost, and his teeth have a most offensive look.

Then look at one of the rodents, as the rat, with his narrow, displayed incisors, with their mean, contemptible look. He is the fellow that sneaks around at night, makes holes in your cupboards and gnaws your lead-pipes, and occupies your drains. There is expression in his teeth, but to me it is of an ungenerous sort.

In contrast to these, look at the incisors of the horses, and one can hardly look at the skeleton in the Natural History Society rooms without feeling that he is grinning at you. Observe the teeth of this animal, for they are worthy of a great deal of study. It almost seems that this was the pattern that dentists took for making teeth. Observe the centrals, how broad and flat they are; how unobtrusive the eye teeth, or canines, if you like the term better. Observe the horizontal line of occlusion, and the broad, regular arch. Do we see malice in this expression? Do we not see a broad, generous nature, perhaps a little coarse, but highly amiable? Who has not heard of a *horse-laugh*, that condition of laughter when the head is thrown back, and from central to molar all the teeth are shown in the plenitude of their ivory lustre!

But my limits forbid following this train of thought further.

You will say, What has all this to do with the expression of artificial teeth? Have a moment's patience and you may see.

Observe all these animals, and let me ask you if any one of them looked as though it had in a set of artificial teeth, and you will say that the harmony of their colour and the complexion and the perfect adaptation will answer that question.

Our artificial teeth should have this same harmony, and I announce that no artificial teeth *can be perfect* without harmony of colour between them and the complexion.

In short, if the colour is too light, they make the complexion appear ghastly; if too dark, they apparently darken the complexion.

All the faults I have named have much to do with the expression. If the teeth are too long, the mouth is opened too wide and the lips are drawn down to cover them, thus thinning the lips, giving a close-mouthed look, except when the person laughs or talks, and then there is too much display of dentistry. If the teeth are too short, the lips are drawn up and thickened, giving a shrewish expression, and making it appear at times as though the person had no teeth. If the arch is too large, it takes up the lips and cheek, giving also an undue prominence to the lips, making a sensual or babbling expression, varying according to the size of the arch. Want of prominence of the eye teeth allows the corners of the upper lip to fall down, making a mournful expression. If the eye teeth are too long, and prominent or sharp, we have a savage expression. But leaving many of the criticised points, I desire to speak of size and style in giving characteristic effect.

A fine, brave, generous boy said to me a few days since: "Are not my teeth larger than usual?" "They are!" said I. I could have told him so with my eyes shut, for he had a winning, open, frank, generous manner that was not consistent with small teeth. Since then I have worked for a lad some years older, with remarkably pointed eye teeth and bicuspid, but I have no insight into his character, although he was the son of an old friend; his secretive disposition made him reserved in expression.

Show me, if you can, a person with irregular teeth, and not show me one who is undeveloped at some grand point of character; irregularity being, I contend, mostly want of development.

Take from your specimens any central tooth, and you may judge, to a certain degree, the character of the former owner. The delicate formed slender teeth you will not call the teeth of a giant but of a delicate woman. Those sound, plump-looking teeth are a man's. Those short, yellow, small teeth are usually set in a prominent alveolar ridge and large arch; I will testify that the owner came from a long-lived family and is a great worker.

From these and similar indications the dentist must build up his science of expression. As I have said, the natural teeth are a prominent and the best guide a dentist can have; but if these are lost beyond recovery, judgment and the eye of an artist is necessary to give or restore the normal expression.

What, then, shall the dentist do when the patient comes to him without teeth, desiring artificial ones? First, look at the patient. If the skin is light, the teeth must be in harmony. If the features are large, the teeth must be large also. If thin and narrow and delicate, the teeth must be so also. If nervous and long-limbed, indicated by long, thin hands and feet, the teeth should be long in proportion to the width; and if, with plenty of money in his pocket he quibbles by the hour for the lowest price, put in a set of narrow teeth, and he will be perfectly satisfied, as it will suit his character perfectly.

If your generous hearted, full-souled friend desires teeth, and you place some small narrow teeth in his mouth, it would be like putting teeth like those of a rat in the mouth of a horse or cow; and if in the mouth of your sharp, versatile friend you place a set of teeth whose horizontal line shall be straight, and whose eye teeth shall be deficient in prominence, it would be like placing the teeth of a horse in the mouth of a fox or dog. And if in the mouth of your mean, snivelling person you place a generous and wide set of centrals and laterals, you give him a character better than he deserves.

I have thus sketched the outline of a very important subject of observation and study. I hope others may be able to fill up the sketch, as I have no doubt they are able to do to a certain extent, and yet there will be room for more study and more observation. If you say that some of these ideas are new I shall be pleased, for we are associated together for the purpose of bringing forth the new and the untried, that we may try them in the light of reason and experience. You have your thoughts on this subject, and other subjects that interest us: please speak them, please write them. I have believed what could be said could be written. The dread of the pen vanishes with familiarity. Volunteer an essay as one of the means of improvement — that assists in concentrating the mind, which is the secret of power.

In a word, give *expression* to your mind. As the features of the face improve by dwelling on pleasant thoughts, so will the features of the mind; and when the Great Artist shall chisel away the rough human marble that surrounds the soul, I hope to see, in "the new dwelling-place," old friends with ennobled expression, won from the triumphs over material sorrows and wrung from the truest successes in this life.

—*Cosmos*.

## ALVEOLAR ABSCESS.

BY DR. W. H. SHADOAN.

**ALVEOLI.**—Semi-circular canals or grooves into which the teeth are set. Their size and shape are determined by the teeth that occupy them.

**ABSCESS.**—From *Abscedo*, I depart or separate from, loss of substance, a gathering or rising, a collection of pus in a cavity, the result of a morbid process or action in the parts. The French have various distinctive terms for abscess, as *Ab'ces chaudaigñ sendain*, is one which follows violent inflammation; *Ab'ces froid chronique scrofulux*, cold, chronic or scrofulous abscess, one which is the result of chronic or scrofulous inflammation; *Ab'ces par congestione*, diastheseque, symptomatic abscess, one which occurs in a part, at a distance from the inflammation by which it is occasioned. "Some writers are of opinion that pus is formed by the arterial system, and is deposited by way of excretion in the inflamed parts; others, that it is formed by the destruction of the solid parts." It seems to be a degeneration of the liquor sanguinis and exudation corpuscles. "In Alveolar Abscess we have the whole range of structure involved, from unpronounced amorphous, mucus mass, or chaotic materials in the juices of the flesh, from which arise and by which are nourished the neural and muscular fibrillæ, the vascular and osseous, no less than the glandular and dermal tissue. If then all these must be involved in destruction just in the ratio of the size of the sac, in every case of matured alveolar abscess, is it not of some moment to us to be able to detect the order of its inception and progress from its first beginning to its most unmistakable presence? Where then is the point of departure from normal activity? Is it in the juices of the flesh? Or is it in the granular living contents of the cells? Or may it not have its inception, in a refusal on the part of the formed material of the cell wall, to afford free transit into and out of the parenchyma of the cell to the pubulum or juices upon which it subsists? Although it may be clear to him who has investigated this subject, that all departures from healthy action take their origin in the neural sea, or juices of the flesh; yet it is difficult to prove this to the uninitiated mind short of labourious and tedious detail of untrient activities. The oneness of this sea throughout the whole range of the body within the outer pellicle or skin, whether that body be large or small, composed of one organ or many divisions, their sustenance from this elemental mass, renders the whole body or any part of it, subject to change in accordance with the extent of the application and the force of the disturbing agent." \*

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\* Prof. Atkinson on Alveolar Abscess.

There is a very little difference between alveolar abscess and abscesses in general; the former has its origin within the alveolar border, while the latter may have their origin on the outer surface of the osseous system and in the soft parts.

Abscess is the most common affection to which the alveolus is subject. "Its effects are always exceedingly pernicious,"\* not only to the sockets of the teeth thus affected, but to the gums, and very often the health is largely affected thereby. When severe inflammation of the lining membrane of the tooth or the alveolus is produced, causing the death of one or more cells which separate and form a pocket, there is an effusion of coagulable lymph, which will harden and form a sac, which attaches itself to the tooth or alveolus at the point of inflammation. This may be averted even after the sac is partially formed, by interrupting or cutting off the poisonous food or supply which feeds the disease. The cells forming the walls of the nucleated abscess having the least power of resistance, give way first and determine the direction of the abscess. Cold abscess may readily be detected by its appearance, which is recognized by the parts being enlarged, of a soft or spongy appearance, with very little tenderness and slight constitutional disturbance. It progresses slowly, and is found in persons of low vitality and of a scrofulous temperament. The warm variety is almost the exact opposite of the cold, the parts swell, are red, and very tender to the touch. There is a great variety ranging from cold to warm; some will be intermediate, while others will approximate the one or the other extreme.

In evacuations of the cold or chronic variety the pus will be found thick and poorly defined, with very little traces of blood lying close to the surface, showing a slow development and little variety. It is not so with the warm, the pus is more fluid, with traces of blood, and on evacuation will be found coming from the middle, while red blood will be discharged from the surface cut or walls of the tumour. The last occur in persons of sound constitution, are rapid, and of easy cure, if not complicated with other diseases, while the cold is, as before stated, slow and stubborn, requiring skillful treatment, or in other words very tedious of cure, often requiring the best skill, and in some cases resisting curative effort altogether.

#### DIAGNOSIS.

The correctness of the diagnosis will depend somewhat upon three things (viz :) Acuteness of perception, the stage of the affection and the characteristics of the patient. In its earlier stages, in some peculiar con-

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\* Harris' Principles and Practice of Dental Science.

stitutions, diagnosis is very difficult. But to the close observer and the thoroughly conversant it is not so, especially with the acute variety. The presence of abscess may, by some, be detected while yet in its primitive or cell state, and, in such a case, cure is almost certain. The following may be considered some of the unmistakable signs of abscess: In the earlier stages redness of the gums, extreme tenderness of the tooth to the touch, swelling of the gums, &c. At a later period the symptoms become more prominent. Elongation and loosening of the tooth, and increased size of the gum over the point affected, a great rush (apparently) of blood to the part on taking a recumbent position; increase of pain in the parts, a fistulous opening through the gums, cheek, jaw, or at any other point where the pus may be conveyed by the aid of a suture or other channel, susceptible of being traversed by pus. These are most prominent signs of alveolar abscess, and may be regarded as reliable. The cause and duration of the disease will depend upon the constitutional health of the patient, of the susceptibility to abscess, the stage of the disease when the treatment is commenced, and the kind of treatment adopted.

The warm variety is the most rapid in its course, and the cold is the slowest; the intermediate, in temperature, will vary between the two classes above named in duration. The general health always strongly influencing either variety or class of abscess.

#### CAUSES.

The causes of alveolar abscess are very numerous. A lack of power, on the part of the system, to take up and appropriate the nutritious food contained in the juices. The presence of irritating matter, dead nerve membrane, dead roots of teeth, mechanical violence, sudden and repeated transitions of temperature, and any other cause that produces acute inflammation. Irritating matter may be secreted at the point of the root of a tooth in which the nerve is dead, and as long as the canal of the root or roots is kept open there may be more injurious effects, but as soon as the avenues of escape are closed, by any means whatever, the escape of the matter is checked, and as the secretion is still kept up it will soon form, in such quantities, as to produce pressure on the lining membrane of the socket, and a high state of inflammation and congestion is set up. It is not always the case that a dead tooth has a decaying nerve; in some cases the nerve is entirely gone, yet a secretion may exist at the apical foramin, which, if not allowed to escape, will produce the same effect that a dead pulp will. It is one of the most difficult points in pathology to ascertain just how much inflammation will be tolerated. If the recuperative powers

be equal to the inflammatory conditions, one will poise the other, and as one predominates so will be the result.

In some cases there will be evil resulting from the slightest disease, while at other times it will take almost death itself in the parts to produce any change whatever. This is often manifested in other things; sometimes men die from slight scratches, and at other times they may be torn almost to pieces and yet live. I remember, during the late rebellion, having seen a man who had received thirteen wounds, either of which seemed sufficient to have killed him; yet he wholly recovered. I allude to this only to show how much the system is capable of resisting at some times as compared with other times. We are all aware that the system cannot endure as much at one time as it can at another. This depends somewhat upon the condition of the mind. An abscess is often produced by the simple operation of filling a tooth at an improper time; for instance when the system is in a reduced condition, or when there is inflammation in the parts or any other unhealthy condition, that contributes to the formation of alveolar abscess. To attempt a clear and concise description of all the circumstances that tend to produce or contribute to the formation of abscess would be a tedious as well as unprofitable undertaking; the above refers mainly to roots of teeth and teeth in which there is no nerve membrane. The next class of causes that claim our attention are those in which the nerve membrane is yet remaining. A tooth may be slightly decayed, enough so to expose the pulp, and the irritation thereof from contact with the air, from chemical action or otherwise, may be sufficient to produce inflammation in the membrane, and this, if not relieved by topical applications, usually results in the death of the pulp. The power of recuperation in the pulp of a tooth is very low at best, and when inflamed from contact with the air and fluids of the mouth, death is almost sure to follow. The engorgement may be relieved by stimulants or by drawing the blood from this point to some other, thus permitting the part to recover. This may be done by the use of leeches, counter-irritants, activity of body or mind, or both or any other act that will change the current of blood to some other point. It takes very little irritation in some persons and especially at certain times to produce inflammation at the apex of the roots of teeth sufficient to cause an abscess, and the conditions mentioned above seem peculiarly to favour this result. There are other cases where the nerve of a tooth is not exposed, but the decay approaches very closely, the cavity is cleansed and filled, and the thermal changes in the filling, together with the close proximity of the same to the pulp, will cause irritation and inflammation; and as the tissue is encased in a firm and unyielding chamber the only egress is

through the foramin of the root, and whether the cavity is filled or not an abscess may form. After a tooth is filled the nerve often dies from inflammation produced by the operation. Abscesses may be formed and exist for a long time without being apparent, and in persons of good health, have existed and been cured by nature alone. I have seen cases where there had been abscess and no external signs of lesion, and the persons themselves had no knowledge of its existence, clearly showing to my mind that an abscess may exist and be radically cured by nature alone. The next among the causes that we shall mention is mechanical violence; this, like many other causes, has its peculiarities. Mechanical violence may be in any direction that will bruise the periosteum of the tooth. But the most favourable is the lateral. You may force a tooth in the socket with such violence as to bruise or otherwise wound the membrane and cause inflammation. It may first be in the form of periostitis, but if the inflammation is not allayed a plasma will be wiped out and matter formed; but as before stated the most favourable kind of violence for the production of abscess is the lateral. Strike a tooth on either side and not only bruise the investing membrane, but the nerve itself is liable to be injured, either of which will cause thickening of the membrane and produce the same result. An alveolar abscess is sometimes caused by simple inflammation of the PERIOSTEUM this is often the result of sudden transitions of temperature. These are some of the exciting causes; there are others that might be named, but for the present we will omit them. There are general or constitutional causes which contribute largely to the formation of abscess,—persons of a manifest inflammatory diathesis or those in which there is considerable local inflammation from some local exciting cause. Those of a manifest strumous diathesis and persons living in miasmatic districts are more likely to be attacked than those of a healthy condition.—*Dental Register*.

(*To be continued.*)

## IODINE AND ACONITE IN PERIODONTITIS.

BY FRANK ABBOTT,

PROFESSOR OF OPERATIVE DENTISTRY IN NEW YORK COLLEGE OF DENTISTRY.

THE best remedy, and the one that works the most conveniently, for periodontitis, I have ever used (and I have tried nearly everything recommended), is a mixture of equal parts of—official tincture of iodine and tincture of aconite root, applied to the gum around the roots of the tooth with a camel's-hair brush, or a portion of cotton wound on the end of a

stick of orange wood; I have been using it about a year, and, to my knowledge, it has never failed to relieve the patient. I apply it, in the early stages of inflammation, once in twenty-four hours; in very severe cases, twice. In my office practice, and in the Infirmary, I have opportunity of observing its workings to quite an extent. There are advantages in its use over other remedies which you will readily observe on trying it.

One other little thing I have just discovered; it may be old (it is certainly good enough), but is new to me. To prevent exudation from the gums, where it is difficult to use the rubber dam, dry the gum well, then paint with collodion. If not *disturbed*, it will remain dry as long as you wish.—*Cosmos*.

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## MISCELLANEOUS.

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### ALUMINUM AS APPLIED TO DENTISTRY.

Dr. Starr gives the following as his observations made in two years, in regard to the advantages and disadvantages of aluminum as compared with other bases for artificial teeth. "As compared with gold, which many consider as the best article upon which to insert artificial teeth, the advantages which gold possesses over aluminum, is greater strength and capabilities of a higher finish; while aluminum has the advantage over gold in being only about one-sixth its specific gravity; is more easily worked, and is capable of resisting the actions of the alkalies and acids of the mouth nearly as well as gold; what has been said of gold as compared with aluminum, will apply to platinum as well. Aluminum in comparison with silver has many advantages. Silver will corrode, while aluminum will not. Silver has four times the specific gravity, and has about the same strength, but is not as easily adapted to the mouth as aluminum. Rubber is thicker, heavier, more brittle and no cheaper than aluminum."—*Dental Register*.

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### NITROUS OXIDE.

The Quebec journals mention two cases of surgical operations successfully performed under the influence of nitrous oxide in that city. In one case, —removal of a cancerous cicatrix—the gas was respired during twenty-five minutes without producing, it is said, any derangement of the stomach or causing any depression of the heart's action. In the other, Choparts operation was performed, and occupied so long a time that the gas was all used up, and then the patient who had hitherto felt nothing, began to suffer. Dr. Pourtier, a French dentist, of Quebec, administered the gas. Protoxide has been used at the Middleton Hospital in two cases, one of which, the removal of an in-growing toe-nail, furnished a good test of the power of the agent to produce insensibility to pain. Dr. John Murray administered the gas to the patient, a lad, whilst Mr. Hulk split up his nail and removed it in halves. No pain was experienced. The whole process occupied one minute and a half, and in thirty or forty seconds afterwards the patient was able to walk.

In another case an elderly man with sinuses in the abdominal wall, which Mr. De Morgan slit up, the influence of the gas was not quite so satisfactory. The patient felt some pain. His appearance to bystanders during part of the time was, to all intents, that of a person in an epileptic fit, presenting as he did dense lividity of features, frothiness about the teeth, fixed and staring eyes, with dilated pupils, and rigid convulsions of the muscles of the arms. Notwithstanding this aspect Dr. John Murray, who is well qualified from experience to pronounce an opinion, told us that he should have been quite content to prolong the inhalation. It is impossible to imagine a condition of safety more strongly resembling that of imminent danger to life, and the secret of the physiological condition which it obtains has yet to be discovered.—*European Mail*.

### LAVATER ON THE TEETH.

The following extract from Lavater's "Physiognomy" may be appropriately read in connection with the selected article on "Artistic or Expressional Dentistry on page ."

"Than the characteristics of the teeth, and the manner in which they display themselves, nothing is more striking, or continually visible. The following are the observations I have made thereon :

Small, short teeth, which have generally been held by the old physiognomists to denote weakness, I have remarked in adults of extraordinary strength; but they seldom were of a purer white.

Long teeth are certain signs of weakness and pusillanimity. White, clean, well arranged teeth, visible as soon as the mouth opens, but not projecting, nor always entirely seen, I have never met with in adults, except in good, acute, honest, candid, faithful men.

I have also met foul, uneven, and ugly teeth, in persons of the above good character; but it was always either sickness, or some mental imperfection, which gave this deformity.

Whoever leaves his teeth foul, and does not attempt to clean them, certainly betrays much of the negligence of his character, which does him no honor.

As are the teeth of man, that is to say, their form, position, and cleanliness, (so far as the latter depends on himself), so is his taste.

Wherever the upper gum is very visible, at the first opening of the lips, there is generally much cold and phlegm.

Much, indeed, might be written upon the teeth, though they are generally neglected in all historical paintings. To be convinced of this, we need but observe the teeth of an individual during the course of a single day, or contemplate an apartment crowded with fools. We should not then, for a moment, deny that the teeth, in conjunction with the lips, are very characteristic, or that physiognomy has gained another token, which triumphs over all the arts of dissimulation."

The new law in Ohio, compelling all physicians to suspend practice who have never received regular diplomas, took effect the 1st inst.

Dr. H. Schmidt has found that the power of accommodation of the eye is materially influenced by toothache. His observations are published in vol. xiv. of the *Archiv für Ophthalmologie*.

THE  
CANADA JOURNAL  
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DENTAL SCIENCE.

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VOL. I.]

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[No. 6.

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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A FEW HINTS ON EXTRACTING.

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BY W. G. BEERS, MONTREAL.

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In cases where it is necessary to remove a large number of teeth or roots, in both jaws, at one sitting, under the influence of an anæsthetic, a few hints occur to us which may be serviceable to somebody. Where Nitrous Oxide is used these hints will not apply as fitly as to chloroform or ether, as with the former but a few teeth can be removed before the patient awakens, while with the latter it very often happens that both jaws can be completely relieved of their denture before the patient recovers his sensibility.

First select your instruments. Everything needed should be at hand. The towel for chloroform should be starched stiff.

Cover the patient from neck to knee with a cotton cover or towel, pinned to each shoulder, to prevent the blood soiling the dress. Make a thorough examination of the work before you; fix in your memory the number, position and peculiarity of every tooth or root to be extracted: we lance the superior right and left dens sapientiæ—particularly at the farthest extremity—for reasons which we will give in detail in a future number of the Journal. Whenever there is any undue prominence of the alveoli, over the cuspids for instance, which, if left, would interfere greatly with the regularity of the arch for an artificial set, we sometimes cut it down on the labial face while extracting, or after extracting the tooth, as may be found most convenient.

If this is done carefully, it may be done with perfect impunity, without adding anything to the discomfort of the patient during the healing of the gums, and hastening the absorption and improving the arch.

Use as few instruments as possible—an axiom which will apply with advantage to every operative and mechanical operation in Dentistry. If the patient will submit to lancing before inhaling the anæsthetic, it may be proper to lance around roots difficult to grasp; but if not, the haste with which the operation has to be performed where there are a large number to extract, demands economy of time, and lancing is not always advisable for cases where roots predominate. We use the bayonet-shaped alveoli forceps for the upper jaw, without changing, and with care it subserves the use of the lancet. First, clear away all roots with the alveoli forceps, if a change of instrument is required.

As soon as the patient is thoroughly under the influence of the anæsthetic, commence by extracting the teeth of the inferior jaw first, on either side, beginning at the roots farthest back, or at the dens sapientiæ. Extract the molars and bicuspid first, leaving the cuspids and incisors to the last.

A small bit of sponge at hand is useful to sop up the blood which may hide the roots from view. The importance of extracting the lower teeth first is obvious, as the blood flowing down from the extracted uppers, if the latter are first removed, would interfere greatly with the proper adaptation of the instrument, and some roots might be overlooked.

There are various precautions necessary, such as providing for hæmorrhage, vomiting, syncope, &c. Patients with long legs should be so placed as to put them out of kicking distance of your windows, lest they should take a notion to stretch them into the glass.

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#### AN ESSAY,

*Read by THOMAS ROWE, before a meeting of the Dental Profession of Ontario, in the City of Toronto, Jan. 21, 1869.*

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#### THE ANATOMY, PHYSIOLOGY, PATHOLOGY AND TREATMENT OF THE DENTAL PULP.

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Of the organs with which the Dental Surgeon has to deal, there is none of greater importance to both patient and practitioner.

**And I think I may safely say, there is not an organ in the entire**

human system about which there is a greater diversity of opinion.— One practitioner of high professional attainments advocating wholesale destruction of all pulps exposed; while his neighbour of apparently equal ability, insists on preserving all alive.

A quoted article in a late number of the "Canada Journal of Dental Science," tells us that the pulp lacks recuperative power, and that death is almost sure to follow inflammation. Such a statement, if true, cannot be productive of benefit, but being as false as it is broad, is decidedly injurious in its tendency, and it is the hope of clearing up a little of the ambiguity surrounding this little organ that has induced the production of this paper, feeling assured that all who enter into the investigation will be well repaid for their labour, and in the end agree with me that the dental pulp does not lack inherent reparative force.

In the first place what is necessary for recuperative power?

To which it may be replied, nerve-force and arterial blood.

Then let us proceed to study its anatomical construction and Physiological conditions, after which we shall be better able to understand its pathological lessons, and have a foundation upon which to base an intelligent, and I hope successful conservative treatment, for the honor of our profession, as well as the benefit of humanity.

Anatomically, the dental pulp is almost entirely composed of nerves and blood vessels occupying that cavity in the tooth which commences at the apex of the root and terminates in the crown; and is consequently surrounded on all sides by a firm wall of tooth substance. For convenience the pulp may be studied, as it is anatomically divided into a body which occupies the chamber in the crown of the tooth, and a pedicle or cord composed of a nerve, artery and vein, extending through the canal from the apical foramen until it becomes blended with the body.

The nerve is a derivation from the fifth pair of cranial nerves, and is probably accompanied by a filament belonging to the Ganglionic nervous system.

The artery is a branchlet from the internal maxillary which is one of the terminal divisions at the bifurcation of the external carotid artery.

The vein returns into the general circulation, the unused materials carried in by the artery.

Now we find that the pulp is made up of nerve and blood vessels: that its sensory nerve is a branch of the fifth pair, the most highly sensitive nerve in the human body, and it is not improbable filaments from the Ganglionic nervous system accompany the sensory nerves from their

junction at the Casserian Ganglion\* to the pulp, and whose special function is supposed to preside over and preserve the balance of the circulation.

Then there is abundance of blood supplied by the maxillary vessels, which are very large in proportion to the territory they nourish, so that we are forced to the conclusion that the dental pulp does not lack Physiological powers for recuperation, which is substantially borne out in practice.

Of the number of open pulp chambers, the majority contain living pulps; which reluctantly yield up their vitality to that deadly irritant Arsenous Acid, after being subjected to that worst of all exposures, the Dentist; and sad would be the tales of those innocent pulps were they permitted to relate their sufferings and treatment, how their inherited habitation and protection had been violently torn in pieces while their sensitive bodies bound down and unshielded in their original positions, remained for days, months, and even years, exposed to all the variations of temperature from the boiling to the freezing point; as well as being constantly subjected to contact with foreign substances racking their bodies with pain and not unfrequently forcing out their very life blood, still tenaciously clinging to vitality, until at last presented to a Dentist who eagerly embraces the opportunity to apply a death remedy, or with instruments tears in pieces the innocent offender.

I presume you are now ready to ask why an organ so highly endowed should so frequently die? A question easily, and I think satisfactorily explained, since we have learned that the pulp is composed almost entirely of nerves and blood vessels surrounded by firm unyielding walls, receiving its nourishment through an arteriole that traverses the canal in the root of the tooth; which in the normal conditions of the vessels carries in no more blood than can be returned by the vein after supplying the requisite materials for nutrition and protection, but when a breach is made in the wall of the tooth and the pulp becomes exposed, irritation results from thermal changes and contact with foreign substances, the balance of that force which presides over the vascular circulation is destroyed, the walls of the vessels become relaxed inducing congestion, and producing exudation, the membranes become thickened and the calibre of its vessels reduced so that its circulation is stopped, the supply of nourishment being cut off the pulp dies of starvation, being that termination of inflammation termed gangrene in other parts of the body.

Exposed pulps are frequently presented in a comparatively healthy

condition, having caused little or no pain aside from a momentary twinge after coming into contact with foreign substances, and as they do not require treatment aside from protection we will pass them by for the present in order to consider those accompanied by a more painful history, for the better illustration of which let us take a case in practice.

A patient presents a decayed tooth stating that for several days and nights the pain had been so severe that sleep was impossible, and still continues without abatement, and further says that tenderness in that tooth has prevented mastication on that side for a year or more, that it has been frequently painful for a longer or shorter period after taking cold, &c. Having heard enough of the history, and proceeding to the examination, a cavity filled with all kinds of materials is discovered, when the first thing to be done, is to *carefully* remove all foreign substances.

I say *carefully*, because success depends in a great measure on delicate manipulations.

After which the pain should be controlled as soon as possible. This may be accomplished in the majority of cases by applications of Carbolic Acid, Creasote, Chloroform or Tincture of Aconite on pledgets of cotton.

Occasionally all the above remedies will fail when local abstraction of blood by puncturing the pulp with a sharp point will give immediate relief. After the pain has subsided, dress the pulp with Carbolic Acid on a pledget of cotton sealed into the cavity with cotton saturated with gum sandarac to be allowed to remain for at least 24 hours, during which time the congested vessels will have an opportunity to resume their tonicity and normal functions, causing no further trouble, but if as occasionally happens, there should have been a little pain during the interval, I should think it advisable to repeat the dressing for another 24 hours, not deeming it advisable to permanently fill the cavity within one day after the last manifestation of disease in the pulp, 48 hours being the maximum time required for the worst cases I have treated.— And now having all the exposed pulps restored to a healthy condition, let us consider the best method of preserving their Physiological actions for which purpose it is only necessary to protect them with a nonirritating, non-conducting plastic material, possessing the inherent property of solidification.

It must be nonirritating, so that it will not induce congestion. Non-conducting to prevent thermal shocks and probably death. Must be

plastic and of a creamy consistence to accurately adapt itself without pressure to the surface it is designed to protect, and solidify to form a base for a filling.

To find a material possessing the above qualities all combined, seems the greatest difficulty at present in the way. Oxychloride of Zinc produces more or less irritation which usually subsides as soon as the material becomes solidified, but occasionally the results are not satisfactory, the pain continuing almost unbearable for hours.

I have used plaster of Paris in a few cases, and find it free from irritation, and so far as my experience has gone, it has been much more satisfactory than any other material I have tried for the purpose; but I should prefer a material possessing greater density. When plaster is used, it should be fresh and of the finest quality.

During the last six months I have treated and capped over eighty exposed pulps, taking each as it was presented; favorable as well as apparently unfavorable cases, several of them required puncturing to relieve the pain. Only three have given subsequent trouble as far as I know, all of which are dead, removed, the canals filled, and the teeth are doing good service.

Of course, I have not received reports from all my cases, neither am I certain that all are alive that have not given trouble, but this I do claim, that if one-half are living and doing service, it is better than destroying all.

And it is evident, I think that the worst results of conservative treatment will only produce death of the pulp, which is equal to the *best* destructive treatment, for the three cases of failure above mentioned only resulted in death.

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## DENTAL EDUCATION.

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BY A. C. COGSWELL, HALIFAX, N. S.

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In these days of knowledge and professional advancement, how can the true lover of his science quietly remain an unobserver of the rapid strides, improvements, and general elevation in his special department. The truly professional man is constantly searching for new light, that which enlighteneth all, which will bring hidden mysteries to view, find out new remedies, organize new plans, and form a new centre round which all lesser lights radiate. The time has come when men of years, experience and practice, deem it necessary

and requisite to lift the standard of Dentistry high above its former level, remove the old land marks, shake off the old garb of jealousy and secret doings, and flock young and old, rich and poor, from every quarter of the globe, and there as a body of men at the modern school of Athens, sit quietly at the feet of those who so nobly and generously devote their time and ability, without pecuniary reward, as professors and teachers in this noble science and profession of Dentistry. What a debt of gratitude is due to those who struggled through difficulties and opposition, in order to establish schools and colleges where the principles of Anatomy, Physiology, Chemistry and the prerequisites so essential in the art of Dentistry may be learned, and a systematic and thorough knowledge obtained, before granting that degree which years of constant practice, and months of steady application to studies alone entitle them.

Your board of examiners have made a move in the right direction, would the law could extend to the lower provinces of Nova Scotia and New Brunswick, that travelling quacks and so called professional empirics might be prevented from taking undue advantage of so many of our people in both these provinces, and especially through many portions of the villages and country towns. Cannot something be done? May we not combine our forces, and take such steps as will rid our provinces and allow only these who may be lawfully recognised as fit and proper persons to practice this calling? I appeal to those of New Brunswick as Dentists, to combine with us of Nova Scotia and let us do as has been done in Canada. By combining our forces we maybe able, not only to protect ourselves, but the community at large. Can we not form our societies, and meet together at stated periods for the purpose of elevating not only the profession, but for the good of one another. These societies are quite numerous at the present time, all over the United States forming both district as well as state organizations. Let us not stand aloof in every good enterprise—especially when the public are beginning to ask who are the most skillful, educated and proper persons with whom to intrust themselves and their children for Dental operations. Those of us who have been struggling hard for the past ten or fifteen years, cannot close our eyes to all these things, but feel desirous to advance in the same ratio in the provinces as do those of the United States, and place ourselves in the same footing with those high up in the profession, let “Excelsior” be the motto.

**The time will come when only those will be employed whose names**

are enrolled as properly educated Dentists, whose experience and skill alone, combined with a proper collegiate course, will entitle them to hold a highly honorable and professional position as Doctor of Dental Surgery. Anent an article in the June number of your Journal, respecting the "requirements of Dentists" perhaps you will permit me to give an outline of what is required at the Philadelphia Dental College, speaking as I do from personal experience, having spent the last two months within its walls, and propose to continue until the close of the session. This institution has already acquired a world wide fame in England, France, Germany and America, being represented by students from all parts of the United States. One from France, two from Germany, four from Cuba, two from Canada, three from Nova Scotia and one from China. This College has been established since 1863, the founders of it deemed it necessary, for the interest of the Dental Profession. Trustees were selected who were men of liberal views upon scientific and literary subjects, which entitled them to act as Directors of such an educational institution, such men as Rev. Richard Newton, D.D., President, and R. Sheldon MacKenzie, D. C. L., secretary, with their colleagues, whose names stand high in the literary world, and with untiring energy, and no ordinary efforts established this school where Dentistry may be learned as a speciality, having been now in successful operation for the past six years.

The method pursued during the terms are, first, in the middle of the month of October a series of preliminary lectures, preparatory to the regular course, upon subjects connected with the practice of Dentistry, comprising general remarks upon extracting teeth, taking impressions, making casts and dies, the consideration of the circulation, of the anatomy and functions of the organs of Digestion, Anaesthesia, Chemistry, Electricity and other interesting subjects. After the lectures are regularly commenced each professor aims to make them as practical as possible; in order to do this no small amount of pains and expense have been incurred to procure an extensive and valuable museum, to meet the wants of the students.

*(To be Continued.)*

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ADDRESS OF A. C. STONE, M. D., BEFORE THE  
ONTARIO SOCIETY OF DENTISTS.

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*Gentlemen of the Ontario Society of Dentists:*

You have elected me to preside at your meetings during the first year of your organized efforts for mutual improvement and Dental

progress. For this unexpected and undesired mark of your confidence you are entitled to my sincere thanks. It is also due to you that I should endeavor to understand your interests as members of this body and aid in promoting those interests in an honorable and practical manner.

I have to congratulate you on the progress your society has already made both in numbers and talent, as I see before me many of the best members of our Profession in Ontario, men capable of upholding and advancing the best interests of our noble calling: men willing and anxious to learn all and everything that would be of advantage either to themselves or society: men also who are quite competent to teach and impart much valuable information to others, and this I may say is one of the leading objects of this society, an object I trust that will not be lost sight of in this or any future meeting, but that all our energies will be used for the purpose of elevating and perfecting the profession of Dentistry, by the cultivation of an enlarged liberality of sentiment, by the fostering of an honorable spirit of emulation, by the full and free interchange of views and opinions. No Profession can possibly hold a respectable position in the world whose individual members fail to respect each other, or who disregard the high degree of honor which should ever be found to characterize their intercourse. With ill-natured remarks about our brother practitioners, either in relation to their ability as dentists or as men, a gentleman can have nothing to do. It cannot enter into any portion of his necessities or interests: it can neither elevate him in the mind of his hearers nor can it add one particle of ability to his capacity; it can attach no glory to his name, no credit to his reputation, therefore it is a deadening occupation, utterly beneath a calling whose aim is usefulness, whose aspirations are noble and exalted. The man who can listen to the detraction of a co-worker in our ranks without a blush of indignation towards the perpetrator of the wrong, is a sorrowful spectacle of a mistaken and misguided man. But he who can slander another for mere jealousy, is indeed a weak creature, claiming the pity and contempt of all. "For he that steals my purse steals trash, but he who filches my good name takes that which enriches not himself but makes me poor indeed."

We are unfortunately subjected to a nuisance in many respects, that is fast leveling the practice of Dentistry to a mere trade, which the other learned professions are not in the least infested with; I al-

lude to a system of under-bidding. Physicians and Lawyers have established fees for their practice throughout whole communities regulated by local associations. Dentists have all prices at all times, the consequence is that a fair price for skilful operations is seldom obtained, only by an exception to the general rule. One operates for five dollars a filling, others for two or one and so on down to thirty-seven and a half cents, scaling and extracting thrown in. Each claiming to do the best, all managing to secure patients in each community.

This is still worse in the department of plate work, particularly rubber, some inserting full sets for \$50 others \$20 to \$16, in fact any price they can get over and above the price of the material used. Thus inducing patients to go about cheapening operations as they would for dry goods, or old clothes.

Small Dentists becoming veritable jews, doing work from a large sum to a mere song, according to the customer.

Here comes the tug of war. Men who are competent and skilful, require a corresponding price for their work, persons of inferior acquirements, and low grade, regulate their prices according to the sliding scale of humanity, and pull long faces at, as they are pleased to call, the extortionate fees of the master of his profession.

It is well known to every professional man, that there is as much difference in the operations of Dentists as there is in a sum in addition, and a problem in Euclid, as wide a difference in workmanship as there is exhibited in a penny trumpet and a Steinway piano; yet to those who apply for Dental services, and who can but imperfectly judge of these things, there is no important difference, as they are led to believe, in most cases.

True, there comes a time, often too late, when they awake to a sad knowledge of the difference between good prices, and good operations and low prices, and still lower operations.

They have eaten the forbidden fruit, and acquired the knowledge of good and evil, but as in the case of our first parents, that knowledge has brought its corresponding curse.

Every man, however, will fail sometimes, it is unavoidable, our operations being at times purely speculative.

The question now arises what should be done to improve this state of affairs. The answer is let every one resolve to improve and educate himself to the highest standard in our profession, and insist that our

students shall undergo as careful training, and as severe a course of study, as the other learned professions exact from their candidates, we shall then take that rank that we ought to be entitled to in the community, and shall no longer hear the remark made when any one asks you what Dr. is that? O, "he is not a Doctor, he is only a Tooth puller."

Elevate the profession and you infinitely advance yourself: exact an educational standard from your Professional Brethren, and you produce the highest order of moral and intellectual worth. We have good reasons for being proud of the advance the Dentists of Ontario have already made in this direction; I allude to our Dental bill passed last year, and to come into effect on the fourth of March next. A great deal has been said and written about educating our patrons, but in the present state of our own knowledge, it would be, I fear, like the Blind leading the Blind; still I believe in doing all we can by imparting correct information to our Patients, so to enlighten them with regard to our profession, as to enable them to detect the more glaring impositions which are practiced.

I trust you will not consider this address a lecture on good behaviour. As I have had very little or no experience in preparing an article of this kind, I hope to be excused for the short comings that may be found in it.

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#### PROCEEDINGS OF SOCIETIES.

Proceedings of the Dental Association of Ontario, (reported by J. S. SCOTT, M.D., Recording Secretary).

The Semi-Annual Session of the Dental Association of Ontario, commenced its sittings in the St. Lawrence Hall, Toronto, January 19th, 1869.

PRESENT:—J. O'Donnell, President, in the Chair, J. S. Scott, Rec. Sec., J. A. Brown, C. S. Chittenden, S. B. Chandlee, B. W. Day, M.D., G. W. Hale, T. J. Jones, A. D. Lalonde, J. B. Meacham, W. H. Porter, G. V. N. Relyea, Richd. Trotter, R. G. Trotter, H. J. Wood, L. Wells, D. D. S., H. G. Weagant, A. Burns, J. B. Devlin, T. Neeland, and others.

The Recording Secretary read the Minutes of the last Session, which were adopted on motion of G. V. N. Relyea, seconded by B. W. Day, M. D.

The President introduced Dr. G. W. Beers, of Montreal, as Honorary Member of the Association, who addressed the meeting.

Mr. O'Donnell, the President, read the following address :

*To the Members of the Dental Association of Ontario :*

GENTLEMEN,—It is with the most profound feelings of pleasure and satisfaction that I am able to meet on this occasion so many of the leading members of our profession in this Province—pleasure in having the honor of occupying the high position entrusted to me by you and satisfaction in knowing that your presence is an indication that the object in view, viz: The elevation of our speciality to a position above the ordinary callings, meets with your warm and cordial support.

It is unnecessary for me to enumerate the many advantages connected with our meetings; suffice it to say they have been beneficial to us, we have become acquainted with each other, have exchanged ideas, the result of which a great many hidden truths, buried in the bosom of an individual, have been promulgated and become generally known, approved and adopted by the members.

It is flattering to the organization of this movement that within the short space of two years such a wonderful revolution has been made in the standing of the profession. Previous to our organization, the unenlightened portion of our population had an impression that it was impossible for one dentist to be better qualified than another to operate. I think I can safely venture the assertion that this hallucination has been dispelled. The first enquiry made now is whether he is qualified, or in other words has he obtained his certificate; if he has not, the probability is he is not employed, except in cases of urgent necessity.

This has been the result of our united efforts, and, consequently the efforts of the Association. The public are now becoming acquainted with the importance of our profession and the necessity of a proper education, and knowledge of its various branches by its practitioners.

I regret, however, that persons practicing our speciality have attempted to urge on the Legislature the repeal of the first part of clause 12, of "an Act respecting Dentistry." Upon inquiry I find that the majority of them have never identified themselves with the Association, have never done anything for the profession, but have been satisfied to remain in the seclusion of their own places, and to keep their "light" (if they ever have any) confined under a bushel.

By the course pursued by these people they have done everything in their power to convince the public of their incapacity. They have shown that they are afraid to face an examination, based on the ordinary principles of the art, viz: Operator and Mechanical Dentistry, Dental Anatomy, Physiology and Chemistry: all branches that persons to perform the various operations in dentistry should be familiar with and without which they cannot be successful.

In conclusion, allow me to express the hope that each one of us will exercise our energies to the advancement of what has been so auspiciously begun, that we will consider that we are not associated for personal favor or power, but that each one will put his shoulder to the wheel. With a unanimous desire, determination and hearty co-operation, I have no fear of the results. We will then be the means of giving light to the people and reflecting lustre on so noble and high an art, thereby devoting those talents entrusted to us by the Almighty to the propagation of science and the honor and credit of this Great Dominion of Canada.

Mr. Relyea moved, seconded by B. W. Day, M. D., that the address delivered by the President, be referred to the following Special Committee, namely:—J. B. Meacham, R. G. Trotter, W. C. Adams. R. G. Trotter reported for Committee on credentials, the following as worthy of Membership—as incipient members.

S. J. Sovereign, L. McDonald, Geo. Cæser, J. L. McDonald.

The Report was adopted and the several gentlemen were duly elected.

L. Wells, D.D.S., reported a fusible metal for repairing plates, which he said was very successful in his hands. He also described his mode of constructing rubber plates.

G. V. N. Relyea described his mode of working Aluminum. Dr. Day, A. D. Lalonde, and others, reported upon the next subject for discussion, viz.:—"Materials used in Filling."

R. G. Trotter moved, seconded by A. D. Lalonde, that the Meetings of this Session commence each day at 10 o'clock a.m., 2 p.m., and 7:30 p.m.

The Association adjourned.

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## MORNING SESSION.

St. Lawrence Hall, Toronto, }  
 Jan. 20th, 1869. }

PRESENT :—L. Wells, D.D.S., in the Chair.

J. S. Scott, M. D., Recording Secretary, T. J. Jones, N. J. Peck, G. V. N. Relyea, L. Bennett, W. H. Porter, H. A. Baird, — Robinson, C. H. Dorland, E. Cartwright, —, J. Bowes, T. Rowe, M. D., J. Yemen, H. G. Weagant, T. Neelands, and others.

G. V. N. Relyea presented the models of a case of regulating, in which nature brought a second bicuspid and canine into their proper positions after removal of the first molar in the mouth of a boy fourteen years old.

J. O'Donnell said he did not believe the pressure of the lip could assist in bringing the teeth into line when developed outside the arch as had been advanced by some.

G. V. N. Relyea said he considered the use of elastic bands in regulating teeth, decidedly objectionable.

J. S. Scott, M.D., gave notice of motion to amend the Constitution, so as to reduce the joining fee to two Dollars, and to raise the annual fee to *two Dollars*.

Moved by J. S. Scott, seconded by Dr. Relyea, that the sum of two Dollars be refunded to each person joining the Association at this Session.—Carried.

The Committee on Credentials reported C. H. Dorland, J. Yemen, C. Cartwright, G. S. Thomas, Edward Thomas, H. A. Baird, G. H. Hattand, and Robert E. Law, worthy of Membership. The gentlemen were severally elected.

Adjourned at 12 o'clock, noon.

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 AFTERNOON SESSION.

St. Lawrence Hall, Toronto, }  
 Jan. 20th, 1869. }

The Association met at 2 o'clock.

PRESENT :—L. Wells, D.D.S., in the Chair.

J. S. Scott, M.D., Recording Secretary, T. Rowe, M.D., W. George Beers, T. J. Jones, N. J. Peck, G. V. N. Relyea, W. H. Porter, H. G. Weagant, and others.

Mr. Relyea moved, seconded by Mr. Jones, that a deputation of

two members of this Association be appointed to meet a similar number from the new Association to endeavor to effect a union of the two Associations.—Carried.

J. S. Scott moved, seconded by T. J. Jones, that G. V. N. Relyea and Thos. Rowe, M.D., be appointed such Committee.—Carried.

The terms of Union were then drawn up by the Recording Sec., to meet the views of members, and adopted by the Association, after which it was signed by all the members present.

After adjournment the Committee presented the following Report, which was adopted. The President in the Chair.

The vote for the Union of the Associations was unanimous, the Report being adopted on motion of Dr. Day, seconded by Dr. Scott.

# REPORT.

*To the President and Members of the Dental Association of Ontario:*

The deputation appointed by the Ontario Society of Dentists, and also the deputation appointed by the Dental Association of Ontario, on the subject of amalgamation of the two Societies beg to Report, jointly, as follows:—That it is desirable that the two Societies be united. The following being adopted by the Joint Committee as a bases of such Union.

1. That the Officers of both Associations cease to discharge the duties of their respective offices.
2. That a Chairman, Secretary and Treasurer be appointed to act until July next.
3. The new Society to have the funds and papers of both, and to pay the expenses of both Societies.
4. As the old Association has made the first advance, the new to be invited to meet in St. Lawrence Hall, the room being more appropriate.
5. That the Lecturers of the new Society have the precedence.
6. That the new Society be called the “UNION DENTAL ASSOCIATION OF ONTARIO.”

All of which is respectfully submitted.

R. TROTTER,	}	Ontario Society
H. H. NELLES,		of Dentists.
T. ROWE,	}	Dental Association
G. V. N. RELYEA,		of Ontario.

RECEIVED,

J. O'DONNELL, *President*

## EVENING SESSION.

St. Lawrence Hall, Toronto, }  
Jan. 20th, 1869. }

PRESENT:—J. O'Donnell, in the Chair, with a full attendance of the members of the Association, and of the new Association, the union having been effected. The members of the new Association entered the room in a body, when they were greeted with marks of applause.

Dr. Richardson delivered a lecture upon the Anatomy of the fifth pair of nerves, after which Dr. Bergman addressed the meeting, complimenting the profession on having secured the union of the two Associations.

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“UNION DENTAL ASSOCIATION OF ONTARIO.”

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The Semi-Annual Meeting of this Association was held in the City of Toronto, on the 21st day of January last, and was attended by about fifty members. All Sections of the Province being well represented.

The Chair was occupied by Dr. Rowe, of Cobourg, and J. B. Willmott, of Milton, acted as Secretary.

At the morning Session, W. C. Adams, of Toronto, read a paper on the “causes of decayed teeth,” which called forth considerable discussion, in which Messrs. Sabine, Nelles, Trotter, Dr. Rowe, Dr. Stone, Dr. Scott, Zimmerman, Relyea, Callander, and Bowes took part.

At the afternoon Session, Mr. Jones of Bowmanville, read a paper on “artificial teeth, and bases used,” and Mr. J. W. Elliot of Toronto, a paper on “mechanical Dentistry.” These papers gave rise to a considerable discussion on the various points raised, in which most of the members present took part.

A very interesting paper on “Capping Nerves” was then read by the President, Dr. Rowe, of Cobourg, when the association adjourned until evening.

At 8 p. m., in accordance with previous arrangement, Dr. Caniff, Professor of Surgery in Victoria College, delivered a very excellent Lecture on the Pathology of the fifth pair of nerves.

On the conclusion of the Lecture it was unanimously *Resolved*,—  
“That the thanks of the association be presented to Dr. Caniff for

his very instructive Lecture, with the request that he permit it to be published in the *Dental Journal*.

Mr. C. S. Chittenden, of Hamilton, read a paper on "Fang filling, and on motion, the thanks of the association were presented to him, and a copy requested for publication.

The paper on Fang filling provoked considerable discussion, in which Messrs. R. Trotter, J. W. Elliot, R. G. Trotter, Bowes and others, took part, some approving, and others condemning the views of the essayist.

During the meeting of the association, Professor Richardson, of the Toronto school of Medicine, laid the members of the profession under great obligation, by a very interesting lecture on the "Anatomy of the fifth pair of nerves," And by his kindness in exhibiting to the association, through powerful microscopes, a large number of very fine specimens of the enamel and Dentine, not only of human teeth, but of the teeth of many of the lower animals.

The Annual Meeting of the Association was appointed to be held in Belleville on the fourth Tuesday in July next.

The following are the committees appointed at the meeting:

To make arrangements for the meeting in Belleville. Messrs. Relyea, Dorland, Ward, Bogart, Rowe and Day.

To prepare topics, and make arrangements for their discussion at the Annual Meeting.

Messrs. Rowe, Chittenden, Jones and Graham.

To report on constitution and by-laws, Messrs. Bowes, Revell and Willmott.

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#### ONTARIO SOCIETY OF DENTISTS.

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The second meeting of the above society, was held at the Rossin House Toronto, commencing on the 20th of January.

Members present, A. C. Stone, M. D. President ; J.W. Elliott, 1st Vice President ; C. S. Chittenden, 2 do.; R. Trotter, Secretary ; W. C. Adams, Treasurer, R. G. Trotter, M. E. Snider, F. Soper, A. McMichael, F. G. Callender, J. B. Devlin, A. D. Lalonde, J. B. Meacham, J. B. Willmott, J. Bowes, H. H. Nelles, D. D. S ; J. B. Sabine, M, Nicholson, R. Revell, T. Neelands, W. Paterson,

W. Wells, G. W. Harris, C. P. Lennox, and many others, whose names were not obtained.

Minutes of former meeting were read and confirmed.

W. C. Adams read an essay on the cause and effect of decayed teeth on which a lengthy discussion followed, While debate was going on, a deputation arrived from the Dental Association of Ontario, proposing an amalgamation of the two societies. A resolution appointing a deputation to confer with the deputation, from the Dental Association was offered, but was stoutly opposed for some time on the ground that as the society was then warmly engaged in the discussions, it would be unjust to those who had come a long distance to attend the meeting, to lose any time in forming an amalgamation. The resolution was carried however, and R. Trotter, and H. H. Nelles, D. D. S. were appointed deputies.

As the *result* of the conference of the Deputations from the two organizations has been given in the proceedings of the *Dental Association*, we do not consider it necessary to publish the remaining portion of the Minutes of the *Ontario Society*.—ED.

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#### DENTAL ASSOCIATION OF THE PROVINCE OF QUEBEC.

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BY W. G. BEERS, SECRETARY.

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In the Local Legislature, February 5th, MR. CARTER presented a Petition of the Dental Profession, of the Province of Quebec, praying for Incorporation.

The Constitution and By-Laws of the Association have been printed in English and French, and supplied to the members. The meetings of the Society have been arranged so as not to clash with those of the Association in Ontario; the Annual Regular Meeting being held on the 3rd Thursday in September, and Regular Meetings on 1st Thursday of every alternate month. No member of the association must take a student for less than three years, unless he has studied elsewhere a sufficient length of time to make his joint term of pupilage equal to three years.

A Special General Meeting was held in Montreal, on the 6th of February, at the Office of DR. TRESTLER.

DR. BERNARD, in the Chair.

PRESENT.—A. BERNARD, C. F. TRESTLER, H. R. S. TRESTLER,

WEBSTER, BREWSTER, LEBLANC, BELLE, ALLOWAY, GLOBENSKY, DAVIS, VALOIS, NICHOLAS, LEFAIVRE, BEERS.

The Minutes of former Meeting were read and confirmed, and DR. BERNARD explained the object of the Meeting, to adopt the Act of Incorporation, elect a Board of Examiners for Province of Quebec.

The Act was read, clause by clause and adopted. It was thought expedient to follow the Ontario Act in so far as possible, with a view to making its provisions as protective and stringent. The folly of having a dozen Members in the Board of Examiners has been wisely avoided, and the number is restricted to nine. The elections for the Board are by ballot. The present Board hold Office for one year from the Annual Meeting in September, and future Boards continue in Office for two years. The following were elected the Board of Examiners :

A. BERNARD,	Montreal.
G. BAILLERGEON,	Quebec.
C. F. F. TRESTLER,	Montreal.
J. H. WEBSTER	"
C. BREWSTER,	"
G. A. BAZIN,	"
W. G. BEERS,	"
E. LEFAIVRE,	St. Johns.
H. ROSS,	Quebec.

MR. BOWKER, having expressed a desire to be relieved from serving on the Committee of the Association, was succeeded by MR. DOWLIN, of Sherbrooke.

MR. NICHOLS was promoted to active Membership.

After the business was over, DR. TRESTLER invited the Members to refreshments, and the rest of the Evening was spent in social amity "on the square."

The following toasts were drank, "The Queen," "Governor General," "The Dominion," "Dental Progress," "Unity of English and French in Canada." MR. VALOIS, Song, "A la claire fontaine," and several other beautiful French songs, and at a late hour, the meeting broke up, feeling that such social gatherings do no harm to those who are wise enough to know how to use them, and tend to promote concord and unanimity.

## ALVEOLAR ABSCESS.

BY DR. W. H. SHADOAN.

(Continued from page 158.)

## HOW THEY ARE PRODUCED.

It will be well to state that the same laws govern alveolar abscess that govern abscesses in general. The healthy action of a single cell, or a number, may be disturbed by a faulty, or diseased supply of nutritious matter, or by mechanical violence, wounding or entirely obliterating them, either of which will deprive the cell or cells of their pure pabulum or food, and death is the result. When periosteal inflammation takes place, whether it be at the apex of the root or any other point, and continues until suppuration ensues, the periosteum is at that point thickened, and as the matter accumulates, the periosteum is distended, and begins to press against the walls of the alveolus, and the consequence is, that the walls at the point affording the least resistance, are absorbed until there is an opening formed for the escape of the matter.

“Let us take, for instance, a case of common phlegmonous abscess, and trace it from its origin to its culmination. The inception depends upon the poisoning of pabulum, or mucus mass, by the accumulation of innutritious or effete matter, which disturbs the nutrient action of one or more cells, by depriving them of their pure pabulum or healthy liquid fluid. These salts and gasses being held in solution, have a tendency to diffuse themselves in every direction throughout the free juices of the flesh, and this predominance of chemical affinities disturbs the equipoise of the currental movement denominated vitality, and is destructive in the exact proportion of its predominance.” The healthy parts are constantly making an effort to stay the further advance of the abscess and to some extent limits the size of the sac. The process of the formation is by breaking down cell after cell, until the whole surrounding structure is destroyed; this may be slight or extended, owing to the poisonous condition of the juices, and the state of the health of the patient. There seems to be no settled theory among authors, just how, or by what *modus operandi* abscesses are formed. Some writers assert that the sac is formed by the distention of the periosteum, while others say it is formed by the hardening of coagulable lymph, which is effused at that point. If the latter be true,

then it is certain that the periosteum is destroyed by a sort of chemico-vital process so far as the pressure of the sac extends ; then if the theory of the formation of the sac, by the distention of the periosteum be true, that membrane is changed somewhat in character ; the healthy periosteum being a white fibrinous substance capable of powerful resistance, &c., while the sack of an abscess is of a different character, inasmuch as it is much more highly organized, and is capable of greater resistance than healthy tissue.

Prof. Harris says that "whenever there is intense or severe inflammation at the root, or in the alveolus, infusion of coagulable lymph takes place, which hardening, attaches itself to the tooth, and ultimately a sack is formed. This, as suppuration takes place, distends and presses against the alveolus through which an opening is formed for the escape of the matter."

The character of abscesses is exceedingly variable, owing to the constitutional peculiarities, and susceptibilities, the condition of the parts immediately concerned, and to the cause producing it. There are exceptions however to all rules, but this is the general rule. Persons of a scrofulous temperament are more liable, as before stated, and an abscess in persons of this temperament takes the chronic form almost immediately ; while those of good constitutions will recover with little or no treatment at all. When a part capable of suppuration is subjected to inflammation of the required intensity, some of the small vessels give way and blood is effused into the surrounding parts ; simultaneously with this rupture, or nearly so, the arteries begin to throw out a peculiar plastic matter, called coagulable lymph, this is capable of becoming organized and thrown around the diseased parts, and between them and those which are healthy, it forms a barrier to the infiltration of extravasated fluids.

By some strange process to us altogether inscrutable, the walls of lymph become vascular, and capable of performing the vital functions of secretion and absorption, and by them the pus is furnished. As this secretion proceeds, the previous contents of the abscess, including the effused blood, are gradually absorbed, and fresh pus is deposited in their stead, so that if the tumor be opened at an early stage the pus will be more or less mixed with the blood ; but if the opening be delayed the cavity will be found to contain only pure pus."\*

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\* Bond's Dental Medicine.

## WHERE SITUATED,

The point of attack is usually at the apex of the roots, but not always. In the superior teeth, abscess attacks the incisors sometimes on the side, some distance below the point, and especially on the buccal surface, in the bicuspid there is little difference from the incisors and canine teeth. In the molars the point of attack is frequently in the bifurcations of the roots, sometimes occupying the entire space, if at the apex of the root, the palatine or lingual is most likely to be affected, or in other cases, the interior buccal root.

The same will apply to the inferior teeth as to the superior, except in the single-root teeth. They are rarely attacked except at the apex of the root. The inferior molars are attacked usually, at the point of the roots, but sometimes between them, at or near the bifurcation; as to which of the roots is most liable, there is really no difference. If the cause is from mechanical violence, it will be at the point where the greatest injury is produced. Abscesses in childrens' teeth are produced more frequently by mechanical violence, than probably any other cause, and in the four anterior superior teeth than any others. The third molars and especially the inferior, are more liable to the ravages of this disease than any other class of teeth; they are liable to be attacked at all points; probably, not in every tooth, but there is no point but is liable to attack at some time or other. The temporary teeth are more liable to disease than the permanent, and should be more carefully treated, from the fact that the parts about, are more susceptible to injury than the adult teeth and jaws. The superior incisors will be found more liable than the canine teeth, and the ten anterior inferior teeth less liable than any other class.—*Dental Register*.

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 OXY-CHLORIDE OF ZINC.
 

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However useful this substance may be in the treatment of living pulps, it certainly is not a reliable filling as a *test*. Teeth having exposed pulps have been plugged with the zinc, and remained perfectly quiet for months; but on removing the plugs for the purpose of inserting gold ones, the pulps have been found dead and gone. Now if a *test plug* is desirable after treating a living pulp, it evidently should be one which shall have the same impervious character as the gold one which is to follow. I therefore use *over* the zinc, Hill-stropping. *Missouri Dental Journal*.—C.

### CYLINDER FILLING.

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This method of using gold is altogether too much ignored at the present day. There are thousands of dentists who never use a cylinder. There are some very important advantages in their use.

But what is a cylinder? A "rope" cut into short lengths does not make cylinders. Cylinders are made by folding, carefully, a whole or part of a sheet of foil, so as to make a long and narrow strip or ribbon. The width of the latter should be that of the length of the desired cylinder. This is to be wound around a broad or small four-sided drill, until the roll of gold is large enough. A small, clean piece of paper should be used between the thumb and finger, in which the ribbon should be placed, that it may not be soiled by the exhalations from the skin. The latter is a point too much neglected by those manipulating gold. Mr. Spackler, instrument maker, of this city, has made me a very nice instrument for making cylinders. It is a pair of delicate tweezers, the two arms of which, near the points, are not larger, combined, than No. 25 wire. The arms are adapted to each other for a quarter of an inch from their points, so that when they are brought together they hold firmly the "ribbon" which is to be wound around them. When the tweezers are closed, these arms, in contact, look like a single shaft. A spring, easily opened, holds the arms tightly together, when closed.

Large cavities, with favorable walls, may be very rapidly filled with cylinders. They are placed on end at the bottom of the cavity, and project above its superior margin, as much as desirable, then with a "foot" instrument condense against the sides of the cavity.—Proceed in this manner until the cavity is nearly full, using smaller cylinders as the space grows less. It is not convenient to use a cylinder to fill the last small space. It is better now to use pellets, and a plugger to force the gold to the bottom of the cavity. This can more surely be done than with a cylinder. Care must be taken, as the cavity grows smaller, to keep the bottom of the cavity filled solidly, and if the cavity is very deep it may be necessary, after using long and large cylinders, to lessen the depth of the remaining cavity by inserting a solid floor of pellets.

When full, the gold projecting above the cavity should be condensed with shallow-serrated, or smooth pluggers. These cylinders, projecting above the superior margin of the cavity, make a beautiful

and perfect margin, and there is less danger of *nicking out* the margin than in the use of pellets. If the cavity is under-cut much, *short* cylinders or pellets must be used until the gold is brought out to the perpendicular line falling from the enamel margin, otherwise a cavity just under the enamel will remain unplugged, presenting a weak point for pressure in mastication, and very likely a source of decay.

In wet mouths, or when time is to be economized, this method of filling is very advantageous, as it very much shortens the operation. There is no method in use, in which a greater weight of gold can be compressed into a cavity than by the use of cylinders.—*Ibid.* C.

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## EDITORIAL.

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### OUR INVIGORATED BOW.

After a temporary suspension of the Journal, which our own health and future interests demanded, we again appear before the Dental profession of Canada, with new arrangements which will, we are sure, be acceptable to the profession at large. It would be out of place here to refer to the peculiar circumstances which necessitated the suspension. It must be remembered that the effort to establish a Dental Journal in Canada. was an experiment involving considerable expenditure of time and money, and that as the originator of this experiment, we were justified in taking any course which would best enable us to keep faith with our subscribers and make our Journal a permanent success. Suffice it to say, that we have every reason to be satisfied with the course adopted last October.

We had the pleasure of attending the Dental Conventions lately held in Toronto, and there receiving an unmistakable manifestation of the determination of the Profession to support their home Journal, and fortune, which it is said comes in cluster, has since added largely to our subscription list, not only from Canada, but from the United States and England.

The suspicions and misunderstandings relative to this Journal, are disappearing with those once harboured against Dental organization and Legislation, and it is cheering to feel that the object for which our Periodical was originated, is not to be checked for want of adequate means to pay the printer, or intelligent interest to appreciate its design.

We would like to advert here to the effect the Journal so far has had on Dentistry in Canada; to the influence it has borne and the good it has accomplished; but if this is not already known, we should be last to be the trumpeter.

The transfer to the Province of Ontario was felt to be judicious. We have every assurance that our *confreres*, Messrs. C. S. CHITTENDEN and R. TROTTER, carry the confidence of the Profession of Ontario, and we ask for them every sympathy and support in the labor entailed upon them. Dr. W. H. WAITE, of Liverpool, England, whose name is now well known to the profession, through the columns of this and other Dental Journals, has kindly accepted the position of Corresponding Editor for England.

The Canadian Editors and Proprietors are jointly responsible for the completion of each volume of the Journal. Without fear or favor they will aim to preserve the esteem of the Profession, and make the *Canada Journal of Dental Science*, the promoter of every principle and practice tending to improve the members of our noble calling.

W. G. B.

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#### HARD PULL.

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A gentleman well known to the Hamilton Judiciary, happening to drop into the reading room of the Rossin House, Toronto, while several Dentists were conversing about the proposition to unite the two Dental Societies of Ontario, was accosted by Dr. ———, who said, "Mr. ——— we are talking about forming a new Dental Association, that we may all pull together."

Mr. ——— drew back, as if in amazement, and replied, "Well, Dr. ——— 'I found in my last professional experience with you, that *one* of you could *pull* pretty hard. But what a terrible pull it will be, if you all pull together!"

W. G. B.

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#### NITROUS OXIDE.

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On page 144, of our last number we gave the results of a series of experiments made by Prof. McQuillen, with Nitrous Oxide on Living Animals, and in particular the administration of the gas to a rabbit, which was kept under its influence for two minutes. In a recent letter from the Prof., he informs us that he has since kept one of the rabbits under the influence of the anæsthetic for *one hour and forty minutes*, and

that it was then, at the time he wrote, "running about the room as lively as ever."

W. G. B.

### DR. DAY'S NITRE OF AMMONIA.

We recently inspected the arrangements made by Dr. Day, of Kingston, for the manufacture of Nitrate of Ammonia. He has erected a furnace, complete in every particular, and with a thorough knowledge of the chemical process of preparing the nitrate, he has every facility for supplying it in any quantity. Among many recommendations of this nitrate, we append the following from Dr. Relyea, of Belleville.

"I have now been using Dr. Day's Ammonia, for about three months, and find it equal, if not superior, to any in the market; and cheerfully recommend it to the profession.

G. V. N. RELYEA."

Belleville, Sept. 28th, 1868.

### OUR MISSION.

As the writer has recently undertaken the important and responsible duties of associate Editor of this journal, he deems it proper that some explanation of his objects and aim, should be given his brethren in the profession. His mission is not for the purpose of obtaining filthy lucre, and he has no expectation that it will be pecuniarily a profitable enterprise for some time to come. Knowing that efforts of this kind, in Canada, seldom fill the Coffers of the proprietors; but he feels that higher motives prompt him, in being associated with the Canada Journal of Dental Science. Our profession is comparatively in its infancy in this Dominion. Its interests are of great importance, both to those who are engaged in it, and to the public generally, and feeling that if he can be instrumental in properly directing and elevating the profession of his choice, or useful in promoting its interests in any way, he will be amply repaid for his labor. In his capacity as associate Editor, his sole object and aim will be the elevation, and promotion of the interests of the Dental Profession, irrespective of every other consideration. Our Motto will be *justice* to all; *favor* to none. In everything in which the general *welfare* of the profession is concerned, he will as far as prudence dictates uphold the right, and expose the wrong; and if he should in any case run

counter to the feelings of any, he is confident that the good sense of men who are members of what is, or ought to be, an intelligent and honorable profession, will lead them to give him credit for pursuing an independent, straight-forward course. To err is human, and if the writer should in any case make a mistake, it will be an error of judgement, and not of the heart. He feels that to discharge properly the functions of a journalist, in the interest of an important profession, that he has a serious task before him, and is determined to discharge it faithfully. Dentistry is only emerging from a state of chaos and irregularity, and feeling that he is in some respects a guardian of its interests, the writer will endeavour to deal with it tenderly and judiciously, and do his best to elevate it to the status of a useful and honorable profession. To this end he will not only aim at bringing it up to a higher standard, of scientific and practical attainment; but will endeavour to create a better professional sentiment—something which is very much needed, and a sense of the necessity of a higher standard of general intelligence and education. In a word, he will endeavour to inculcate the necessity of every practitioner being a gentleman, without which the profession cannot have that status which it is entitled to. Believing, as we do, that no Dental practitioner can properly perform his functions, who has barely a mechanical knowledge of his specialty, he will endeavour to show to students and practitioners the necessity of obtaining a respectable knowledge of the collateral sciences. It is necessary that the knowledge of the competent Oculist should extend beyond an acquaintance with the structure and functions of the eye, so we deem it as necessary, that the knowledge of the competent Dentist should extend beyond the teeth. In view of this, he will encourage, and insist on the necessity of all Dental students and practitioners acquiring a fair amount in general Anatomy, Physiology, Pathology, Therapeutics, Chemistry and Metallurgy. The writer will consider it not only a duty, but a pleasure to give any information in his power to students, or the younger members of the profession who may desire to communicate with him on matters pertaining to Dentistry, and will gladly answer any correspondents, whether privately or through the columns of the journal. To our sister profession, the medical, which has shown so much sympathy, and given so much practical assistance in bringing our profession to its present promising position, represented through professors Berryman, Richardson, and Canniff, Drs. Boulter, Baxter, McGill,

Potts and others, the writer with his colleagues, in gratitude, for benefits rendered our profession, and feeling that our interests and duties frequently *anastomose*, will give all the aid and sympathy which their humble function as journalist will permit, asking for the sympathy and co-operation of the Dental profession and all interested therein, the subscriber makes his first bow on the editorial staff of the C. J. D. S.

R. TROTTER,

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### THE DENTAL ASSOCIATIONS.

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The Meetings of the Dental Societies in Toronto, were in many respects far in advance of any that have hitherto been held. There was less bantering about Parliamentary usages, breaches of the Constitution, etc., etc., and more attention to the real business of Dental improvement. True, at the meetings which have preceeded these, the *business* of arranging the "Act," necessarily took up a great deal of time to the exclusion of all other matters; but, we do think, that some portion of the time might very profitably have been spent in the *real* discussion of subjects directly pertaining to every day practice. We think that the great falling off in the numbers in attendance at the late meetings, was owing to the feeling that too much time would be spent, for the amount of benefit to be derived from attending. To all those who stayed away for this reason, we think we can safely say, that they lost ten times more than the value of the time required to attend the meetings. The discussions were spirited and were carried on in the happiest manner, each man seeming to be willing to contribute his mite to the general fund of advancement in the knowledge of our specialty. The Essays were carefully prepared, and brought out a large amount of debate.

There was one feature of the proceedings to which we refer with great pleasure, as, so far as we know, it was the first time that any thing of the kind was ever attempted by any Dental Society.

We refer to the Lectures of Doctor Richardson and Doctor Caniff. To those who studied the Anatomy and Pathology of the Fifth Pair of Nerves, when they were preparing for the practice of their Profession, these lectures served to bring these subjects back again, while, to those who never studied them—we fear that a large proportion of the Dentists of the country have never *really* done so—these lectures will form a starting point, at which we hope they will take

these subjects up and never lay them down, till they have become thoroughly acquainted with them. Now that we have seen how beneficial lectures on scientific subjects may be made to us all, we hope that steps will be taken to introduce something of the kind into the proceedings of every future meeting of the Association C.S.C.

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### REGRETS.

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We have to apologise to our readers for the delay in getting out this number of the *Journal*. The removal to this Province, and the late date at which we received the Reports of the Board and Associations, are our excuse. We hope to be able, after the next one or two numbers, to have the *Journal* ready for mailing about the 20th of each month.

We regret that we are unable to give the proceedings of the "Board" at its January Session in this number. In our next, we will publish Minutes, and also the questions put to the class in the written examinations.

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### ROYAL COLLEGE OF DENTAL SURGEONS, OF ONTARIO.

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We have been requested by the Secretary, Mr. J. O'Donnell, of Peterboro', to state that the Regulations for the guidance of Licentiates will be sent to each as soon as printed; also, that any Licentiate who has not yet received his Certificate, can obtain it by informing him (the Secretary) of the omission.

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### TO OUR "AMERICAN COUSINS."

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We send this number of the *Journal* to all the Dentists in the States whose address we have, and ask them to assist us, both by sending us their subscriptions, and articles on any subject connected with Dentistry. We know that many of you are overflowing with matter that will be of great interest to the Profession in Canada, and we hope, now that the *Journal* affords an opportunity for doing so, that you will assist us in filling our pockets with cash to pay the printer, and our paper, with "such good things" as will tend to our enlightenment and elevation.

## DOCTOR CANNIFF'S LECTURE.

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In the next number of the *Journal* we will publish Doctor Canniff's Lecture on the Pathology of the Fifth Pair of Nerves.

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## SALUTATORY.

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Usually, it is the custom, when a man is placed, or places himself in the position of an Editor of a Journal, for him to write a salutatory, defining his principles, objects and aims: and such may, perhaps, by some, be expected of me; but as my "principles, objects and aims" are pretty well known now to the many readers of the *Journal*, I think it is a custom that will be "more honored in the breach than in the observance," in my case, and shall, therefore content myself with simply giving the following

## BUSINESS NOTICE.

MR. BEERS, the Editor and Proprietor of this *Journal*, thinking that it would be best for the interests of the paper, that it should be published in this Province, came up from Montreal last month for the purpose of looking the ground over and consulting with the large number of Dentists who would be gathered in Toronto to attend the Meetings of the Board and the Associations. After remaining in Toronto for two or three days, he made such overtures to Mr. Richard Trotter and myself, as resulted in our becoming Joint Partners with him, in the Editing and Publishing of the *Journal*. It was decided to have it printed in Hamilton, and to devolve the business of its publication on me. Consequently, although, nominally, one of the Editors, my duties will be principally connected with the *business* of its publication.

I have, therefore, to request that all subscriptions, advertisements, books for review, &c., &c., should be sent to me. As there are three Editors, I have also to request that those Journals which have heretofore exchanged with this, should exchange in tri-plicate, and send one copy to each Editor, viz.: One copy to W. Geo. Beers, Montreal, P. Q.; one to Mr. Richard Trotter, Guelph, Ont.; and one to my address, Hamilton, Ont.

It is the intention of the proprietors to make this a first-class Dental Paper; one which every Dentist in the Provinces ought to have on his table. The large increase which has been recently made

to our subscription list, we think, warrants our believing that the Profession mean to sustain us in carrying out our intention.

As the *Journal* will be sent to nearly every Dentist in Canada, it will be a first-class Advertising Medium; a fact of which, we hope our friends and the public will take due notice, and give us all the support and assistance in their power.

C. S. CHITTENDEN.

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### BIBLIOGRAPHICAL.

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#### MISSOURI DENTAL JOURNAL.

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We have received the first number of this Journal, Edited by H. Judd, M. D., D. D. S., H. S. Chase, M. D., D. D. S., and W. H. Eames, D. D. S. It presents a very creditable appearance, and contains a large number of articles on practical and scientific subjects, which will be found most useful to the Dental Practitioner.

The Editors have associated with themselves, as a Committee of publication, Messrs. Isiah Forbes, D.D.S., C. W. Spaulding, D.D.S., and Prof. H. E. Peebles, of the Missouri Dental College, names as familiar as household words to us all.

If its succeeding numbers contain as much useful matter as the one before us, it will soon gain a position in the front rank of Dental Journalism. The contents of this number are well worth the cost of the Journal for a year. We wish it a long and prosperous career.

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### MISCELLANEOUS.

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**FEMALE DENTISTS.**—The *Deutsche Klinik* says, a young lady from Holstein, has, after many difficulties, obtained permission to study at the Philadelphia Dental College, and is winning golden opinions for her industry. Is it true?

**HILL'S STOPPING, WOODS FUSIBLE METAL FOR VULCANITE WORK, OXY-CHLORIDE OF ZINC.**—In the next number of the Journal we will give the inventor's receipts for the preparation of these three articles.

**SOLDER FOR ALUMINUM.**—A solder for aluminum has been Patented in the United States, composed of seven parts aluminum and one of

tin. Happy are we "Canucks" who have no Patent Rights to pay.

LIQUID SILEX.—To restore thickened Silix to its proper consistency. Put a few drops of warm water in it.—*Dental Office and Laboratory.*

D. D. S.—A degree of D. D. S., means nothing, unless it is backed up by Brains, Instruments, Office and Labor.

LUBRICATING OIL.—One of the best Lubricating Oils, is made by mixing equal parts of Sweet Oil and Coal Oil. This mixture gums less than most oils, and wears well.

USE OF PAPER FOR SURGICAL DRESSING.—Dr. Addinell Hewson, (*Penn. Hosp. Reports*), struck with the fact that paper had been used in the place of lint as a surgical dressing, in the recent campaigns of the Prussian army, tested its practicability at the Pennsylvania Hospital, and, after numerous experiments, has settled on the common newspaper as being the best and cheapest substitute for lint, linen rags, or muslin.

The advantage of economy is no small consideration, as a yard of good patent linen costs thirty-three cents, while a sheet of paper which equals that article in usefulness as a surgical dressing, costs only one cent.

Dr. Hewson uses also, Manilla paper, coated with a thin layer of yellow wax, in the place of oiled silk. In this way a saving of from four to six hundred per cent. is gained; besides affording the advantage of discarding everything appertaining to the dressings each day, by which one source, at least, of renewing contaminations experienced in the employment of oiled silk is avoided.—*Cincinnati Lancet and Observer.*

It is proposed, by the New York Medical College for women, to educate a body of professional nurses to attend freely, or for a moderate charge, persons living in boarding houses and like places, who are not able to secure regular attendance.—*Medical and Surgical Reporter.*

ANTIDOTE FOR CARBOLIC ACID.—Next to the stomach-pump, in poisoning with this acid, the best antidote is large doses of olive or almond oil, with a little castor-oil. Oil is a solvent, and therefore a diluent of carbolic acid, and may be used to stop the corrosive effect of the acid, when its action on the skin is too violent.—*Journal of Cutaneous Medicine:*

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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BY W. GEORGE BEERS, MONTREAL.

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ATMOSPHERIC PRESSURE OVER THE ALVEOLAR RIDGE.

In spite of the most perfect impressions and every possible precaution, it is not uncommon to meet with rubber upper sets which drop down at the front of the mouth, in ordinary conversation. No size of palatine air-chamber seems to obviate the difficulty, and if adhesion is obtained at all, it is after considerable time, *and a perseverance* on the part of the wearer, which the majority of patients do not possess. We have had our share of trouble with these cases, and particularly of late. One case was that of a lady whose alveoli had absorbed with but little accompanying absorption of the gums. The latter remained soft, though healthy to all appearances, and two years after the insertion of the set of teeth there was no perceptible change. The set gave way in front, and dropped. The other case was that of a lady wearing an upper set made by a confrere, which he had perseveringly renewed three times in hopes of securing adhesion, but to no avail. The gums in this instance were hard, and the alveolar process rather more absorbed than usual—the front part being less than the sixteenth of an inch above the level of the palatine bones. We take these two cases as extremes of a condition of gums and alveoli, to which artificial sets are difficult to adapt.

In both these cases, as in all others which we afterwards tried, the

sets were wholly completed ; and the following remedy was only used and is only recommended as a *dernier resort* in cases where sets drop.

In addition to the palatine air-chamber, we cut four separate round vacuums in the rubber immediately over the part which touched the alveolar ridge when the set was in the mouth. Commenced at the second bicuspid on both sides, and ended back of the centrals : the holes a little more than the ordinary depth of an air-chamber.

The result in every case so far has been almost immediate atmospheric pressure, and adhesion of the sets at the very point where they dropped. When the air was exhausted from the mouth, the suction was almost immediate ; and by this means we have succeeded in obtaining perfect suction in several cases which previously were failures. In none of these cases has the mucuous membrane been rendered sore by being drawn into the vacuums, though we make our patients provide against this, by leaving their sets out for awhile, during night for instance, if the gums are at all tender.

We object to air-chambers in vulcanite sets if they can be dispensed with, but there are difficult cases now and then when even the ordinary palatine chamber is insufficient.

Would some of our friends who meet with difficult cases of the kind, try the means here suggested, and report to the *Journal*. We are aware that vacuums have been made over the alveolar ridge of the inferior maxillary for lower sets, but we never heard outside of our own experience of the application of the atmospheric pressure principle to that of the superior maxillary.

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## A LECTURE

*Delivered before the Union Dental Association at Toronto, by WM. CANNIFF, M. D., M. R., C. S., Eng., Prof. of Surgery, University Victoria College, and Secretary to the Canada Medical Association.*

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### PATHOLOGY OF THE TRIFACIAL, OR FIFTH PAIR OF NERVES.

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In accordance with your specified wish, I will now proceed to consider in a necessarily brief manner, the Pathology of the fifth pair of cranial nerves. In doing so, I propose to refer to both Pathological Anatomy, and Pathology proper ; to speak of morbid structure and morbid function.

You have had clearly set forth before you, the anatomy of this nerve; you have learned its place of origin; of its two roots; of its ganglion; of its course and relations; of its size; of its divisions, and of its distribution. You have acquired a knowledge of this nerve in a state of nature. It becomes my duty to endeavour to present to you certain facts relative to those changes which may take place in this nerve, in respect to its structure and function. These changes may exist at any point, all along the course of the nerve, from its origin to the most remote distribution. These morbid changes may arise in the substance of the nerve trunk, or in some one or more, of the adjacent tissues, with which the nerve trunk and its branches are in contact and relationship.

A Pathological state may be hereditary, or it may be acquired; it may be produced during the period of growth and developement; or it may be the accompaniment of later years.

The nerve may cease to grow—its supply of nourishment may be cut off, or its integrity otherwise be injured. On the contrary, the nerve may attain to an unusual size, being fed with an undue amount of pabulum. After having attained to its full developement, it may still become atrophied, or on the contrary hypertrophied.

This nerve, in common with other tissues, is subject to injury—to wounds and to crushing. Inflammation may arise in its substance, or extend to it by contiguity; and, then all of the results of inflammatory action may follow, both immediate and remote. A wound, by dividing the nerve trunk will cause paralysis, so may effusion from inflammation, by encroaching upon the nerve. Suppuration may ensue, as well as morbid thickening. Ulceration, that is, molecular death may likewise follow, or perhaps even gangrene.

Again, a morbid fibrous growth may present itself in connection with the nerve, having its origin in the nerve tissue or upon the nerve, constituting a neuroma, or the tumor may be in the tooth pulp;—sometimes like a polypus it sprouts through a cavity caused by caries or an accident to the enamel.

The morbid condition may reside in the adjoining structures.—Tumours of various kinds may grow so as to impinge upon the nerve. These tumours may be analogous, that is, like some natural tissue of the body, or heterologous, or unlike any of the natural tissues. Tracing the trifacial to the many periphery, many forms of diseased action may be seen to interfere with the well-being of the nerve. The

dura-mater may be involved, where the nerve pierces it. The petrous portion of the temporal bone is perhaps the site of inflammation; there may be caries, or necrosis of the bone, by which the Gasserian ganglion becomes affected.

Again, at the sphenoidal fissure a tumour is found encroaching upon the ophthalmic branch. The foramen rotundum, perchance, is partially closed so as to injure the superior maxillary branch; or this branch may be disturbed in its bed along the infra-orbital canal; or instead of either of those nerves, it is perhaps the inferior maxillary nerve which is found, upon examination, to be the subject of morbid action. Perhaps the inferior maxillary bone is inflamed or necrosed, that is dead; or it is the alveolus. Caries exists, or a tumour has become developed. Inflammation has resulted in an abscess, alveolar, or otherwise. There may be what is called a gum boil. Spasmodic contraction of the muscles, especially the masseter, a result of irritation of the nerve, will sometimes be followed by suppuration. The abscess opens upon the surface, and a fistula remains, which the constant motion of the part will not permit to close. Sometimes the abscess is within the antrum, which cavity may have become, larger, or smaller, by disease. Again, the dental foramen at some point, is partially obstructed, or the site of some other disease; there is often impaction of teeth, which, as they grow, create serious disturbance of the nerves by which they are supplied. Dentigerous cysts may have arisen from this impaction, "consisting of collections of serum or its modifications confined within the bone. Upon this subject I would respectfully recommend every Dentist to make himself acquainted with the teachings of S. James A. Salter, Esq., Surgeon-Dentist to Guy's Hospital, London.

Continuing to follow the several branches of the trifacial to their various periphery in the teeth, we learn of many further morbid changes. These morbid conditions are, in many respects, peculiar from the nature of the tissue involved; morbid action within the bone and the teeth, although analogous to that witnessed in the soft part, is nevertheless peculiar—and the tooth being more compact in structure, disease in it differs more widely than in the bone; in the same ratio as wear and tear, and nutrition in bone and teeth differ from that in the soft structures.

Disease, involving the several component parts of the teeth, is of the first importance to the scientific Dentist. Inflammatory action

affecting the teeth, or the nerves distributed thereto, may lead to grave consequences, or indicate present, and serious mischief. Apart from inflammation, various and important changes often take place in the pulp cavity of the tooth. I have referred to the polypus of the tooth-pulp of a carious tooth. "This formation is a dense gristly, purplish coloured mass." It "is always attached by a constricted base to the pulp in the canal of one or more of the fangs. The mass itself is usually more or less rounded," generally it fills the cavity.

Again there is a growth of the pulp after fracture from mechanical violence, attended with much sensitiveness. Heat or cold in such cases causes great distress, and under such circumstances the pulp frequently sprouts into a small excrescence.

Reference might be made to the subject of teething. If a child is healthy, and nothing disturbs the parts, nor the nerves, their teething will take place without distress. But the ailments of children are many, and the shedding of the temporary teeth, and the coming of their permanent successors are frequently attended with abnormal conditions in which the nerves are affected, either as cause or effect.

Then, there is the eruption of the wisdom tooth, which is sometimes attended with much pain. This is often due to insufficient room. It leads to much derangement of the nerves, causing spasmodic contraction of the masseter, and altered secretion ; sometimes inflammation of the fauces.

We have now, cursorily it is true, taken notice of the various pathological changes in anatomy which occasionally present themselves in connection with the fifth pair of cranial nerves. In the next place I design to engage your attention relative to derangement of function of this nerve. And, almost any morbid change in the anatomy, such as I have enumerated, is likely to produce a change in the function.

In the first place, we must call to mind, for a moment, what are the physiological actions and condition of this nerve—what are its various duties. It is necessary to do this in order to properly comprehend any departure from a healthy state, and thus be enabled to fully discriminate between Physiology and Pathology, which is not always easily done. Oftentimes the abnormal action, although a departure from the natural is, notwithstanding, a physiological attempt to restore, on the part of nature.

## THE FUNCTION OF NERVES.

We cannot here speak of the nervous system generally ; it is too extensive a subject. We wish merely to speak of the nerve cords, which like telegraphic wires, are planted in every part of the body. No district is so unimportant that it is not supplied, no territory so remote that it has not a telegraph station.

The function of nerves generally, it is understood, is to carry messages to and from the central nervous power, or some ganglionic centre. These nerves are variously classified according to their function, as well as to their origin.

The efferent fibres convey a telegraph message to the nerve centre, that a certain part is in danger, or in want. The demand thus made is promptly responded to by another message, through the efferent fibres. Let us illustrate. The stomach wants food, and there is irritation of the nerves supplied to the coats of that organ. At once the mind takes cognizance thereof. Food is taken into the mouth, and instantaneously the saliva flows to mix with the food as it undergoes mastication ; and when it reaches the stomach, gastric juice is supplied. Incidentally the hand or the foot comes in contact with a hot substance ; as quick as the lightening's flash, the limb is withdrawn from the position of danger. Urine has collected in the bladder ; its presence produces the amount of uneasiness necessary to secure evacuation. Now, in each of these cases there is a nervous communication, and a reflex action ; this is all wonderful, beautiful, harmonious. Sometimes this combined action is under the influence of the will ; the actions are voluntary, or they are simply reflex, or involuntary.

The Physiology of Reflex Action of the nerves was a splendid discovery. Its study is of vast importance. To comprehend it fully, demands close, earnest and continued attention. The Dentist as well as the Medical man will be benefitted by the investigation.

We learn that muscular action is due to the effects of the nerves, such nerves being called nerves of motion. There belongs to every part of the body a *sensibility*, more or less great ; the nerves through which this is maintained are denominated nerves of common sensation. We have, in addition, nerves of *common sense*, that is, those nerves by which we smell (olfactory), see (optic), hear (auditory) and taste (gustatory) ; besides there is the sense of *touch* provided by the utaneous nerve, spread out with more or less abundance upon the

surface of the body. Finally, we have the Great Sympathetic system, consisting of ganglia and nerves of intercommunication with branches, and anastomosing with the spinal and cerebral nerves. Through this sympathetic action, as well as by reflex action, one part of the body takes quick and certain knowledge of any disturbance in another part.

With these general remarks upon the function of nerves, I will now refer specially to the one under consideration, the Trifacial nerve. The first fact to be noticed is that, it is a *compound* nerve; it is a nerve of *common* sensation; a nerve of *motion*, and a nerve of *special sense*. It furnishes the important nerve of *taste* by which we recognize what is palatable from that unpalatable, although its duty in this respect according to recent authority is shared by another, the glosso-pharyngeal. The gustatory nerve sustains most important relations, anatomically and functionally, with the organs of mastication.

Your anatomical instructions have taught you, not alone the distributions of the Trifacial, but likewise the particular anastomoses between its several branches, and of them with other nerves, including the sympathetic. You will not forget how extensive and varied is the distribution.

The eye ball, the lacrymal gland; the mucous lining of the eye and nose; the skin and muscles of the eye brow and forehead, as far as the occiput, are indebted to the ophthalmic branch. The integument of the side of the forehead, side of face, the molar, bicuspid and incisor teeth, gums, lining of antrum, inferior meatus, conjunctiva, muscles and skin of nose, the lips, mucous membrane of mouth, labial glands; these all are furnished by the superior maxillary branch.

Then, in connection with the nerve in the lower jaw, there are the teeth, gums, skin of temple, and external ear and face, lower lip, muscles of mastication, of special sense of taste to tongue, the skin of cheek, and mucous membrane of the mouth, the skin of the temporal region, and about the ear, the joint of the jaw, parotid gland; also, submaxillary gland, mucous membrane of tongue. All of these are derived from the inferior maxillary branch. All and each of these have a duty to perform, a duty that never ceases, nor permits of rest. Yet, so long as all remain in a healthy state functionally, there is no departure from duty; there will continue to be a physiological condition. But, if the nerve at its periphery in any one of these distributions is deranged, then there will arise a morbid condition.

The point of distinction between Physiological and Pathological actions, cannot always be determined ; but when the deviation attains to a certain magnitude, then the distinction is sufficiently easy.

In the investigation of this subject, the student has, beside general observation, two modes of searching, one by vivisection in animals, the other by post mortem observation. In so complex a question as the functions of the fifth pair of nerves, a question not yet fully decided, we cannot fully, at one time grasp the whole subject. We shall confine ourselves to what seems the most practical. All nerves may become subject to two general influences apart from what is normal, one of which is Physiological, the other Pathological. In the first there is simply a physiological stimulus ; in the the other there is a pathological irritant.

For instance, food in the mouth causes a due supply of saliva ; this is the effect of a physiological stimulus ; but the presence of some obnoxious substance in the mouth, or an ulcerated gum causes an incessant flow of saliva ; this is due to a pathological irritant. Again some irritating dust finds entrance to the nostrils, the consequence is sneezing, and a flow of water, to expel, and wash away the objectionable material. But, should the foreign body be sufficiently irritating, or large, that it is not cast out ; then inflammâtary action will follow. The former was physiological ; the latter is pathological. Again, take the eye ; a bit of dirt is lodged upon the cornea, its presence is sufficiently objectionable to lead to a more plentiful flow of water, and the dust is washed away. The whole was transient, and unattended with irritation ; on the other hand, a bit of steel is lodged upon the eye, no moisture can soften it nor remove it ; it remains, producing pain by its presence, and when the eye is moved, or made increasingly sensitive by light. Now, how palpable it is that the one was physiological, the other pathological,

But, it must not be forgotten that irritation of a nerve may be produced, speaking generally, in three different places, viz.:—At the nerve centres, at the priphery, or at some point along the trunk of the nerve. It is most important to remember this, inasmuch as the effects of the irritation may be equal in all cases, and possess no peculiarity by which it can be determined where the site of irritation resides.

Take the bladder, or rectum. The presence of morbid urine, or impacted fœces is attended with severe local irritation, but the physician cannot, consequently, conclude, whenever there is irritation of either of these parts, that there is some local cause, inasmuch as the irritation may be due to an abnormal state of the spinal cord, from whence the nerves are derived. The *galvanic battery* is impaired.

## THE DIGNITY OF THE PROFESSION.

BY W. G. BEERS, MONTREAL.

There has been a good deal of talk about elevating the Profession in Canada, and there is no doubt but that the majority of its members are sincere in their desires, and feel what they say. Looking upon the present position of Dentistry in this country, compared to what it was two or three years ago, we have good cause for gratification ; but we are yet far from deserving the dignity and status for which we aim. The dignity of the Profession embraces so wide a field of discussion, and so many side issues, that it cannot have justice done it in the limited pages of our *Journal*, but a few words on the subject may be in season.

The right hand of fellowship extended to the Dentists of Ontario by the Medical men of that Province is appreciated most highly, but we are in favor of Dentistry standing on its own merits, and if we do not mistake, this is the feeling of those very gentlemen who so nobly countenanced and assisted the Dental movement up West. A want of self reliance has, perhaps, been mistaken for diplomacy, and we think the Dental movement could and should stand on its own merits as a public benefit, and a professional protection. We are sure no one will misinterpret our views on this point, for we derived too much personal pleasure and profit from the Lectures of Drs. Canniff and Richardson, at the last Dental Convention in Toronto, to breathe the suspicion of depreciation, and we have a very high respect for, and approval of such assistance. The point is, that our Profession as a separate and distinct branch of Medicine and Surgery should not need other qualifications for, and claim to dignity than its own position entitles it. To elevate it to this position should be the aim of every true Dentist. We purpose adverting to several matters which we think tend to clog the progress and respectability of Dentistry ; and if in the review, a cap fits any reader, we trust it will be appropriated with the same frankness in which it is given. While admitting that the past, and even much of the present should be no criterion, we believe that the Profession can only attain an equality with Medicine by the abandonment of much that is now common *custom*. A great deal has been said and done in days past, by some of our worthiest members, which to-day is ranked

outright charlatanism, but from the superior views of matters and the higher status of the present, we may be charitable to the past, and let by-gones be by-gones. "Sufficient unto the day is the evil thereof," and there is enough to occupy our reformatory ideas without recurring to the manner in which A. gained a practice, or to the biography of B. Fashion is a great lever, and the most of us are led by the nose with it, and if it is not easy to accommodate ourselves to the changes brought about by more elevated views, it should afford some consolation to feel that these changes are our best guarantees of respectability.

The present styles of *advertising*, used by our profession, do not promise true dignity. We would submit the principle that what is unprofessional in this respect in medicine, is equally so in dentistry; and what is disreputable in the one, cannot by any twisted logic, or plausible reasoning, be made reputable in the other. We have before us as we write a large number of dental advertisements, circulars and cards, which, though representing by no means first class operators, and in many cases the very reverse of good operators, yet mostly all assume an individual superiority on the part of the advertisers, which is remarkable for audacity and untruth. Some of the two former, half a yard long, rival the enterprise and infallibility of Holloway and Perry Davis; others more moderate as to size but quite as quackish. We had no idea of the vast attainments and inspired capacities of certain of our brethern until we read their circulars; and we presume the miserable work we have seen produced by them must be attributed to some peculiar disturbed state of mental and physical nature at the time the work was done. Yet, we have a foolish conviction of our own that if plugging teeth for dogs were fashionable, and our dog needed it, we wouldn't care to trust him, or any other poor dog we pitied, to the care of such superior beings.

The great beauty of the English language is that it can be made to tell truth so plainly, and if we tell those puffing advertisers that in their circulars and cards they lie, it will be attributed to the bluntness of the good old language. They who promise "invariable cures," and "invariable success," tell falsehoods, and know it. We have no desire to quote, lest we be personal, but the amount of falsification, and unprincipled quackery printed in some of these advertisements, is most degrading to the profession. If their prompters were infallible they would have too much modesty to blow about it; if

they were really shining lights in operative and mechanical dentistry, they would not so sound their own trumpets. Vulgar pretensions to be better educated, to know principles and practices peculiar to oneself and unknown to others, savors of, and is, arrant quackery.

There can be no objection to a modest advertisement, in which nothing false or fraudulent is stated. Young practitioners must of necessity advertise, but there is no reason why any Dentist should circulate his circulars at every door, like the handbills of a theatre; turn the whole front of his house into an advertising medium; post his bills on every fence, and in every hotel. He may advertise truth too "loudly" as well as advertise falsehoods. Nothing should be said in an advertisement that tends to create an impression that the advertiser has had peculiar advantages over others, or is more fitted to perform the duties of a Dentist. In fact, more modesty would do nobody any harm.

We have said that young practitioners must advertise, and there is no reason why any Dentist should be proscribed from doing so. The difficulty lies in the style, and the means used to convey the advertisement. The College of Dentists of England—now defunct—obliged every member to sign a declaration that they would not advertise contrary to a by-law of the College—which, we believe, simply permitted name, residence and hours of business; while the College of Surgeons which was empowered to examine and grant Dental certificates, took the extreme view, "that advertisements of every kind and shape are as objectionable in Dentistry as in medicine." The latter rule, however, would never be suitable to a comparatively new country like Canada. With regard to appendages sometimes put to advertisements, the American Society of Dental Surgeons passed the following resolutions in 1845, and as our article has already extended to greater length than we anticipated, we will close by quoting this resolution—proposing, however, to continue the subject in the next number.

"That this Society view the publication of Dentists in connection with their advertisements, of letters of recommendation from Divines, and Doctors of Medicine, and in short, all who are not acquainted with Dental practice, with decided disapprobation, and they would especially recommend to all its members, who may be pursuing this course, to discontinue a *practice savoring so much of quackery*, and which is so well calculated to degrade the Profession."

## THE DOCTOR DESTROYED MY TEETH

BY R. TROTTER, GUELPH.

The above expression is frequently made use of to Dentists, and in some cases is not without reason.

In the administration of medicine, it often happens, that if the physician does not give proper instructions to his patients, or they are careless about following them, the ingredients prescribed have a most destructive effect on the teeth. Hence, physicians, ought to be very careful to inform their patients when medicines are given which must necessarily act injuriously on the dental organs, if caution be not used, of the necessity of washing the mouth carefully after each dose. Notwithstanding, every care be taken, mercurial Ptyalism frequently affects, permanently, the health of the dental organs. The object of this article, however, is not to teach Doctors their duty, but to suggest to Dental Practitioners that a duty devolves upon them, to protect physicians from the erroneous impression that often prevails with persons after having had a severe illness, viz.:—That the “Doctor destroyed my teeth,” when in reality the Doctor or Medicine may have had nothing to do with it. In severe illness, assimilation and nutrition are deranged, and the teeth, in common with other organs of the body, lose a certain amount of weight and tonicity, while the destructive qualities of those agents which injure them are intensified. And the rapid decay of the teeth afterwards, is not caused by the “Doctor” or Medicine, but by a loss of vigor, the absence of the usual cleansing, and a vitiation of the agents that come in contact with them.

I make these suggestions hoping that the profession will feel it to be their duty to correct an error which has long been prevented.

## DENTAL EDUCATION.

BY A. C. COGSWELL, HALIFAX, N. S.

*(Continued from page 168.)*

Doctor Kingsbury, Professor of Dental Histology and Operative Dentistry, commences his lectures by considering Dental Pathology and description of Dentine, with its morbid effects and results, impressing more fully on the minds of the students, by anatomical

collections, from the Saccular state, to the full developement of the permanent teeth, through all their various stages ; preparations of the various cavities for filling, materials to use, and clinical operations, so that all may not only have a theoretical, but practical knowledge ; this is most thoroughly taught in the dispensary and operating room of the College where every student can operate, for those who daily present themselves, and for whom most difficult and troublesome cases are made to yield to proper treatment. All work is carefully examined by the Demonstrator of that department, Doctor W. C. Head, whose qualifications as an operator cannot fail to teach all the true principles of filling teeth, from simple cavities to more difficult ones, in all stages, and in every known position.

The Operating Room is supplied with eighteen chairs, and tables for the students, in which each one may safely keep their operating instruments, to be used according to their several engagements with their patients. All appointments are made by cards which are provided for that purpose. In the Department of Mechanical Dentistry every facility is afforded for instruction. Benches, Lathes, Furnaces and all necessary articles are provided. This department is especially under the supervision and care of Doctor W. P. Henry, who devotes a portion of each day to instructing the students while in actual practice, the proper method of taking impressions, fitting plates, grinding on teeth and preparing them for actual use, both whole and parts of sets, and articulating them properly in the mouths of the numerous patients who are constantly presenting themselves for Artificial Dentures. Two hours of each day are especially devoted to this department. The days for each student to extract are regulated, so that all may have an opportunity to acquire experience and skill in this department. Doctor Smith, who is Professor of Mechanical Dentistry and Metallurgy, is not the less active to describe and explain all the methods and materials used for impressions, castings, plates, and substances used in the manufacture of artificial teeth, from the practical illustration of a block, moulded, carved, creased and prepared for use, as well as teeth mounted on Platina, continuous gums, Gold and Rubber plate ; these are all shewn, that the student may have a knowledge of the various kinds of work best suited for each case. In the department of Physiology and Comparative Anatomy, the means of instruction are very extensive. Professor J. H. McQuillen, who occupies that chair, and who also

has the honor to hold the position as Dean of the faculty, spares no pains to impress on the minds of the class, the science of Physiology, and the laws necessary to be observed for the maintenance of health, illustrating these points by means of a large and valuable collection of fresh and dry specimens, drawings, Papier Mache models. Comparative Anatomy, with the organs of digestion, circulation, respiration, and the nervous system, in addition to a life sized Manakin, capable of complete dissection. Vivisections on lower animals, rabbits, dogs, pigeons and frogs are made in presence of the class, as well as microscopical sections prepared and passed round the class by means of a hand microscope, thus giving an increased interest in the subjects so presented, and proving beyond doubt, all theories on the part of the students, respecting various organs and tissues.

Professor Flagg's instructions from his chair require a quick ear to catch the many valuable ideas as they fluently flow, taking up and applying the general principles of medicine, especially to Dentistry, from the first stages of inflammation, down to ulceration, from a normal to an abnormal condition—with all the causes and effects, preventions and cure, taking up the different Pathological conditions of the teeth, treating on first and second dentition, irregularities, and fully explaining all conditions of caries of the teeth, their supposed causes, and illustrating the different positions of cavities, by specimens of models carved from Plaster, of which a large collection has been carefully prepared by the Professor.

On Chemistry. Doctor S. B. Howell treats of light, heat, electricity and other properties, proving laws by which the operations of nature are governed, explaining the properties of all minerals, metals and liquids, practically illustrating all operations of Chemistry to the entire satisfaction of the class, making special applications of these to the wants and requirements of the Dentist.

\* Doctor H. Allen, Professor of Anatomy and Surgery, gives us a detailed description of the human frame, situation, form, and relative attachments of the various parts, illustrating his lectures by the ample materials in the Museum, and demonstrations by dissections on the human cadaver, especially those of the cranium, keeping in view its great importance in relation to our Profession. This city offers many facilities for students, where lectures on Anatomy can be attended during the evening, as well as classes for dissecting—clinics at the several Medical Colleges as well, also, as at the Hospitals.

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\* Dr. Allen is also Professor of Anatomy and Surgery, in the University College of Pennsylvania.

FILLING TEETH.

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BY C. S. CHITTENDEN, HAMILTON.

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I would like to call the attention of the readers of the *Journal* to the article in the last number, copied from *The Missouri Dental Journal*, on Cylinder Filling.

The writer gives a good description of one of the best methods of filling teeth previous to the commencement of the use of adhesive foil, and says, very correctly: that "This method of using gold foil is altogether too much ignored at the present day."

When we take into consideration, the fact that there are thousands upon thousands of first rate fillings now in use, made of soft foil, either in the form of cylinders or pellets, which have preserved the teeth in which they were inserted, for thirty or forty years, and then take a glance at the vast number of exceedingly poor fillings, made from adhesive gold, which every Dentist meets from day to day, we cannot help thinking that adhesive gold has turned the heads of many of our young operators, and old ones too, for that matter. I would not for a moment urge objections to adhesive gold, for, by its use many teeth can be saved which could not be preserved by soft foil; but I do maintain, that when really as good fillings can be put in with soft foil, in one-tenth of the time required for adhesive gold, it is far wiser to use the soft foil.

The writer in *The Missouri Dental Journal* closes his remarks as follows, viz.: "There is no method in use in which a greater weight of gold can be compressed into a cavity than by the use of cylinders." Now if, as we all know, *that* filling is nearest perfection which is most solidly condensed, and no greater weight of gold can be introduced in any other way, there can be but one objection to this method of filling teeth, and that is, that a filling made of soft foil cannot be made to receive as fine a "finish" as one of adhesive gold. That need be no objection whatever, for, if the cylinders or pellets are heated just sufficiently to dry them thoroughly, before introducing them into the cavity, and each cylinder or pellet solidly condensed as the operation progresses, there will be no trouble in making a fine facing for the filling, by welding adhesive gold on to it, in the same manner as if the whole filling were made of adhesive foil.

Take, for instance, a large crown cavity in a lower molar. If adhesive gold only is used, a great length of time is required to do it properly, and a great deal of patience on the part of the patient, while the utmost care must be taken by both patient and operator, in order to keep the flow of saliva and mucus from flooding the filling. Now, suppose we take the same cavity and fill it with cylinders or pellets, as described in the article from which my text is taken, with the exception, that I would not allow the cylinders to project above the walls of the cavity, but, rather that the cavity should not be quite full after the gold has been *thoroughly* condensed. At this stage of the operation, I would commence building on the adhesive foil, and finish my filling in the usual manner. I adopted this method of using gold in cavities of this description several years ago, and having found it a great saving of time to myself, and of annoyance to my patients, and that I am surer of success, than when I attempt the exclusive use of adhesive foil, I continue to practice in this manner, but I prefer pellets, rather than cylinders, as I think they can be more easily adapted to the irregular walls of the cavity.

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#### ROYAL COLLEGE OF DENTAL SURGEONS, ONT.

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Reported for *The Canada Journal of Dental Science*, by J. O'Donnell, L.D.S., Secretary.

The regular meeting of this corporation was held at the Queen's Hotel, commencing on Tuesday, and ending on Saturday, January 23rd, 1869.

The following members were present : B. W. Day, M.D., L.D.S., President ; J. O'Donnell, L.D.S., Secretary ; C. S. Chittenden, L.D.S., Treasurer ; H. T. Wood, L.D.S., Registrar ; F. G. Callender, L.D.S., J. B. Meacham, L.D.S., A. D. Lalonde, L.D.S., G. V. N. Relyea, L.D.S., J. S. Scott, M.D., L.D.S., and George L. Elliott, L.D.S.

Synopsis of the proceedings of the session :

The following Dentists having furnished to the Board the required information, that they had been in established office practice for five years previous to the passing of the Act, and also being otherwise qualified, were granted certificates to practice, and also the degree of Licentiate of Dental Surgery. D. S. Rupert, St. Marys ; Hugh A. Baird, Acton ; Chas. D. Wait, Uxbridge ; John Bonner, Listowel ; R. M. Revell, and A. Teeple, Woodstock ; John Philpott Sutton,

Brantford ; Thomas Rowe, M.D., Cobourg ; J. H. Padfield, Burford ; Edward Thomas, and James Bastedo, Nelson ; J. W. Elliott, M. Edward Snider and M. Myers, Toronto ; C. N. Vars, Oshawa ; W. H. Card, Whitby ; A. McMichael, Waterford, and J. Wells, Port Burwell.

The following members of the Board were appointed to conduct the examination of candidates for licenses :

Dental Anatomy—Dr. Day ; Chemistry—Dr. Scott ; Institutes of Dentistry—Messrs. Elliott and Lalonde ; Dental Surgery—Messrs. O'Donnell and Wood ; Operative Dentistry—Messrs. Callender and Chittenden ; Dental Physiology—Mr. O'Donnell ; Mechanical Dentistry—Messrs. Relyea and Meacham.

The following having passed satisfactory examinations, were granted certificates to practice, and the degree of Licentiate of Dental Surgery :—

M. S. Beebe, Thorold ; Wm. Patterson, Paris ; J. B. How, Toronto ; Wm. A. Agnew, Lloydtown ; J. B. Devlin, Mohawk ; N. Pearson, Newmarket ; R. Campbell, Guelph ; Geo. W. Harris, Seaforth ; George Ceasar, Kilmanagh ; J. M. Wells, Aurora ; Chas. Graham, Sharon ; C. P. Lennox, Chatham ; L. McDonald, Ingersoll ; P. B. Rosenberry, Arkona ; J. F. Gordon, Drayton ; Henry Robinson, Schomburg ; Frank Soper, Cornwall ; R. Nimmo, Port Hope ; S. J. Sovereign, Bronte ; D. V. Beacock, Lindsay ; J. L. McDonald, Colborne ; L. Burlingham, Owen Sound ; W. Wells, Waterloo ; D.W. Dulmadge, Roblin's Mills ; and Chas. Colter, Strathroy.

The Finance Committee submitted their report, which was received and adopted.

Moved by J. O'Donnell, seconded by J. B. Meacham,—That all Dentists, that have had an established office practice, previous to the passing of the Act, be allowed to practice till the meeting in July next, providing the necessary papers are deposited with the Secretary of the Board before the 3rd of March, 1869.—Carried.

On Friday Evening at the close of the Oral Examinations, the class was called in and addressed by the President, Messrs. Callender, Chittenden, Wood, Meacham and others. Mr. Callender hoped that the gentlemen who had passed their examinations, and were now clothed with authority to practice according to law, would not cease in their researches, neither in their labours to advance their calling. That they would feel a greater degree of responsibility resting on

them now, than heretofore, and accordingly, feel bound to do everything in their power to promote the standing and usefulness of so noble and humane an art.

Mr. Chittenden, followed in a few appropriate remarks, enunciating the same sentiments as the former speaker; he also requested that each person would send his photograph to him, which desire was expressed by all the Members of the Board.

A vote of thanks to the Members of the Board for the uniform kindness and courtesy extended to the class, was carried, on motion of W. Wells and seconded by Mr. George Ceasar.—

Mr. J. L. McDonald moved, seconded by Mr. D. V. Beacock,—That a vote of thanks is due, and is hereby tendered to the Board, for their successful efforts to elevate the profession. Mr. Callender, also received a vote of thanks for an operation performed before the class, viz.:—Filling a front tooth with gold; and building out; also, for the instructions given in connection with the same.

The Session closed at 1 p. m., on Saturday, and the meeting was accordingly adjourned.

The next Regular Meeting of the Board will be held in the City of Toronto, commencing on the third Tuesday in July, 1869.

#### QUESTIONS PUT TO THE DENTAL CLASS.

The following are the written questions put to the class by the different examiners:

##### CHEMISTRY.

- 1st.—Give the properties of Gold and Silver?
- 2nd.—What is an Amalgam?
- 3rd.—What are Sulphates, Chlorides, Nitrates, and how are they formed?

##### ANATOMY,

- 1st.—From what pair of Cranial Nerves are the teeth supplied?
- 2nd.—Describe the Superior and Inferior Maxillary Bones?
- 3rd.—Describe the Periosteum?

##### OPERATIVE DENTISTRY.

- 1st.—Describe the Calcareous deposits upon the teeth, how many varieties, their origin, effects and treatment?
- 2nd.—Describe Exostosis, its effects?
- 3rd.—Describe Necrosis, causes?
- 4th.—Describe Odontalgia, its causes and treatment?

5th.—Describe Caries of the Teeth, causes, consequences and treatment?

6th.—Describe the points to be noted in the examination for Filling?

7th.—Describe the method of Opening, Cleansing, Forming and Filling with Gold an anterior approximal, and a crown cavity of a molar tooth?

8th.—Describe the Pathological conditions to which the teeth are subject?

9th.—Describe the important considerations in the Selection of Materials for filling teeth, and the properties they should possess?

10th.—Describe the treatment of Exposed Pulp, and preparing the teeth and roots for, and filling?

11th.—Describe Alveolar Abscess, cause and treatment?

12th.—Describe the important conditions, under which it is advisable, and the manner of preparing a Natural Root and attaching an artificial crown to it?

13th.—Describe the indications for the Extracting of Teeth?

#### DENTAL SURGERY.

1st.—Describe the manner of Extracting a tooth, any you choose?

2nd.—Describe the manner of stopping Hemorrhage?

3rd.—Give the proper way of aiming at, or reaching the Antrum, the modes of treatment for the various diseases, and the appliances used?

4th.—Describe the proper mode of treatment for diseased Mucus Membrane?

#### MECHANICAL DENTISTRY.

1st.—Describe the different methods of applying Artificial Teeth?

2nd.—Describe the benefit to be derived from Artificial Teeth?

3rd.—Describe the different methods of obtaining correct Impressions and Models of the Mouth, also Metallic models and counter models?

4th.—Describe the method of obtaining an Antagonizing Model?

5th.—Describe the different materials that are used as bases for Artificial Teeth?

6th.—Describe the advantages of one, over the other, or the combinations?

7th.—Describe the manner of preparing and swaging Gold Plate?

## DENTAL PHYSIOLOGY.

- 1st.—Describe the Physiological functions of the mouth ?
- 2nd.—Describe the Glands that supply the mouth ?
- 3rd.—Describe the portion of the mouth most susceptible to taste ?
- 4th.—What are the effects of the Saliva, and when is it most abundant ?
- 5th.—What effect have the Salivary Glands on Mastication ?

## INSTITUTES OF DENTISTRY.

- 1st.—At what age of the Fœtus can you detect the first appearance of temporary teeth ?
- 2nd.—What are signs of appearance called ?
- 3rd.—How are they produced ?
- 4th.—What is the first step in the formation ?
- 5th.—What is the second step ?
- 6th.—What is the size of the alveolar arch at second dentition ?
- 7th.—What is the cause of the elongation of the Jaws ?
- 8th.—At what time is first permanent molar completely formed ?
- 9th.—At what time do the jaws elongate the most rapidly ?
- 10th.—How long does the elongation continue ?
- 11th.—If the teeth cannot erupt, what is the result ?
- 12th.—Do the Temporary Teeth come in irregular ?
- 13th.—Is the first Permanent Molar ever irregular ?
- 14th.—What are the various ways of regulating Incisors ?
- 14th.—How would you regulate a Central Incisor transversely situated ?
- 16.—What is the best method of regulating crowded lower incisors ?
- 17th.—How would you shorten the under jaw ?
- 18th.—At what age should this be done ?

## SELECTED ARTICLES.

## MECHANICAL DENTISTRY.

## GOODALL'S PATENT ELASTIC OR SPRING 'PLATE FOR PARTIAL SETS OF ARTIFICIAL DENTURES.

BY E. B. GOODALL, PORTSMOUTH, N. H.

"Th' invention all admired, and each, how he  
To be the inventor miss'd, so easy it seem'd,  
Once found, which yet unfound most would have thought  
Impossible."—MILTON: *Paradise Lost*.

THE advance in mechanical dentistry has been seemingly slow, but

to those practitioners who can take a retrospective of a couple of decades, placing side by side the results of its present *status* with the comparatively crude specimens which then existed, the advance will appear to have been very sure, if slow. This progress was brought forcibly to the notice of the writer, in his examination of eight or ten beautiful specimens of mechanical dentistry, from the artistic hand of Dr. Reynolds, to be seen in the new and elegant marble depot of Dr. S. S. White, at Philadelphia. The high finish of these specimens of whole sets shows that Dr. Reynolds is not only a ready writer (witness his article upon "Mechanical Dentistry" in the DENTAL COSMOS for December, 1868), but that he is a practical and progressive dentist.

That department of mechanical dentistry which has applied itself to the fitting of *partial* sets, has been notoriously unsatisfactory both to the practitioner and his patients; the latter ought to be, and generally are, wisely, averse to the extraction of the sound teeth left, to give place to an entire set of new dentures. The practice of clasping the plate of a partial set to the natural teeth has always been annoying, insecure, and injurious; and hardly less has been the inconvenience attending the introduction of a suction plate, covering the entire roof of the mouth, and more or less impairing taste and speech.

The need of some method for partial sets which should obviate these difficulties has, in the words of an eminent dentist, "been long and severely felt by the profession."

The writer moderately claims that the elastic or spring plate invented by him, and practically tested by a large number of his patrons, to their infinite delight and satisfaction, has met that want, inasmuch as the dentures inserted by his method are entirely independent of clasps or suction, are adapted perfectly to the natural teeth, and leave the roof of the mouth uncovered; his spring plate gives more firmness, never tipping or rocking from pressure on either side, and is more comfortable to the wearer. By this method every natural sound tooth is retained—the artificial ones matching them. The writer has scores of testimonials from those who have tested in their own mouths, its charming, practical effects. He has recently visited Boston, New York, Philadelphia, and Baltimore, and there personally, invited the examinations and criticisms of the demonstrators of mechanical dentistry of the several dental colleges in the above named cities, and he hereby tenders to those gentlemen his thanks for the cordial manner of his reception, and above all, for their open and frank ac-

knowledge of the novelty of his spring plate, and hearty indorsement of its merits.

At the request of several of these gentlemen, he has prepared the following general instructions in regard to the mode of preparing the plate.

After obtaining an accurate impression of the mouth, either of wax or plaster, taking care not to *draw down the wax around the natural teeth* in removing the impression, proceed to make the *plaster cast, retaining all the natural teeth* upon it. With a pencil draw a curved line around the entire arch of the cast, from one-fourth to three-fourths of an inch from the necks of the natural teeth, usually terminating the plate at the proximal surfaces of the first and second molars, where incisors or canines are to be inserted; and extend the plate around the posterior surface of the dens sapientiæ on each side, where bicuspid and molars are to be inserted. Cut out from the plaster cast all the palatal portion to  $\frac{1}{8}$  or 1-16th. of the pencil line before mentioned; thus forming and shaping the cast, so that the plate when packed will be in two strips or bands, joined firmly and neatly over the rugæ. Thus, when highly vulcanized, there will be a spring to each strip, or two elastic, flexible bands which are *practically automatic*, in the full meaning of the word. Of course the form (as to width and length) is varied according to the number of teeth to be inserted, and the position and arrangement of the natural teeth.

By scraping the lingual necks of the molars or bicuspid on the plaster cast 1-16th. inch, taking care to scrape only above the margin of the gum, the plate will be more secure; but this is not necessary unless the arch is shallow and mucous membrane soft, spongy, or springy. Ordinarily, a perfect impression and well-packed rubber base secures not only a *perfect adaptation*, but the plate is retained in place securely without suction or clasps, simply by its *elasticity*. These spring plates do not rock or tip, even when masticating on artificial bicuspid or molars on either side or both sides, and the same is true in regard to central or lateral incisors, either single or duplicate, or all together. In his practice he has substituted with perfect success, and during the past year has inserted, a large number of partial dentures for patients who formerly wore a clasp or suction plate, and has received the warmest thanks for the neat, light, and thin artificial spring plate, in place of suction or clasp. He is aware that some dentists will be quite ready to say of this principle (everything *new and untried*

has objectors) that it will press upon the natural teeth, producing soreness or discomfort, and is not applicable to *all* cases. The fact is (and facts are very practical) that partial dentures inserted by the method herein described, *do not occasion pain, soreness, or discomfort* to the natural teeth. This being the most plausible objection, it is well to say that it is of no practical import; for suppose the plate to be heated over an alcohol lamp for ten or fifteen seconds, and the two bands to be spread 1-16th. of an inch or more, the result would be at first an undue pressure upon the natural teeth, but in one or two days at most, that pressure would be overcome by the expansion of the arch, so that it would be held in place by its elasticity or spring, alone. If these strips were quite short and stiff, there would be a continual wedge, but the above method is essentially different and entirely automatic, as before shown.

All the spaces and divisions between the natural teeth should be neatly waxed before packing, and when completed, all the points between the natural teeth should be finished with a high polish like the rest of the plate, making a complete and beautiful piece of work.

A gentleman, a dentist of fine reputation and good practice, who has had seven partial dentures inserted by first-class dentists of Boston and Philadelphia, with only indifferent success, having recently adopted this new spring plate on rubber base, says: "I am pleased with the improved plan you have invented for partial dentures, and am confident that it will meet a want *long and severely* felt by the profession. After many unsuccessful attempts (extending through several years), by means of clasp and suction, to have a partial set fitted properly to my mouth, I am now wearing one after your principle with great and increasing satisfaction."

Every practical dentist who desires the advancement of the profession, will gladly welcome this great *desideratum* in mechanical dentistry, for its facility of construction, economy, perfect adaptability, and general utility.

N. B.—The writer would be glad to illustrate by drawings from models, but cannot do so now.—*Dental Cosmos*.

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#### SAVING THE PULP ALIVE.

There is no subject connected with Surgical Dentistry, which engages the mind of the profession at this time, so much as the

above. Experiments in this direction are being tried by thousands, and by the end of another dental year—the next meeting of the “American Dental Association”—we will probably have some reliable statistics in regard to it. In the meantime, I do not deem it advisable for practitioners to give up the practice of destroying and removing the pulp as heretofore practiced. But whenever favorable opportunities occur for watching the case, it would be well to try the experiment of saving even suppurating pulps.

Freshly exposed pulps no one thinks of destroying. In these cases, I wipe the cavity with kreosote and cap with Hill's stopping, and plug with gold immediately. I press the “Hill's” directly against the pulp foramen and do not attempt an arch. C.

*Missouri Dental Journal.*

#### OBITUARY.

Died, at Chatham, Ontario, on the 22nd Jan., 1869, W. W. WHITE, Dentist, aged 40 years.

Mr. White was an Englishman by birth, but came to Canada in early life. He commenced to study Dentistry about fourteen years ago, and after the term of his pupilage expired, settled in Chatham, where he continued the practice of his profession for about ten years. About two years and a half ago his health began to fail, and he gradually sunk under his disease, consumption. For the last six months of his life he was confined to the house. He leaves a wife and three children.

#### BIBLIOGRAPHICAL.

##### CHLOROFORM, AND A NEW METHOD OF ADMINISTERING IT.

We have received from the publishers a neat little volume on the nature, administration, and effects of Chloroform, by A. M. ROSEBRUGH, M. D. Surgeon to the Toronto Charitable Eye Dispensary, which, promises to be of considerable value, to those who employ this drug for anæsthetic purposes.

In the opening part the Doctor tells what impurities are likely to be found, and what means to adopt for finding them, and then gives the opinions, in a condensed form, of many of the most learned men of Europe, who have given the subject their attention, as to the

action of chloroform on the system, and the best treatment to be adopted for resuscitation in cases of apparent death; on the latter, he gives a report of the committee of the Medical and Surgical Society of England.

Nearly half of the work is devoted to a new method of administering the chloroform by inhalers, admirably adapted to the purpose, by which a large saving is made in the amount used, and at the same time the operator is able to know exactly what amount of vapor the patient is receiving, and can graduate the dose from the minimum to the maximum quantity required to produce anæsthesia on the different constitutions.

A copy should be in the hands of every dentist who uses this agent for the alleviation of pain.

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## EDITORIAL.

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### REPLY TO MR. BEACOCK'S LETTER.

We copy the following letter from the *Globe* of March 23rd for the benefit of those of our readers who do not see that paper.

ROYAL COLLEGE OF DENTAL SURGEONS.

*To the Editor of the Globe.*

SIR,—Would it not be well for the Secretary or Treasurer of the Royal College of Dental Surgeons to give a correct report of the receipts and expenditure of all moneys received and paid out by them during their term of office. As there has been some three thousand dollars paid into the hands of the Treasurer by the licentiates of dental surgery for their diplomas during the past nine months, and no report yet given, it is currently reported among the dentists that the money has all been spent. I think, sir, it is but a just and reasonable request to ask how and in what way this large sum of money has been used. The Act clearly states that the members of the Board shall not meet more than twice in the year. In violation of this, they have met not less than four times during the past eight months, each member (and there are no less than twelve of them) receiving something like ten dollars per diem.

By inserting the above you will confer a great favor on the dentists throughout Ontario.

I Remain, yours, &c.,

DAVID VALENTINE BEACOCK.

Lindsay, March 19, 1869.

We propose to make a few comments on the foregoing, not that we think that any one has a *right* to ask any questions concerning the disposal of the funds of the Board, except he be a member of the Board, but, we do think that some of the false statements contained in Mr. Beacock's letter ought not to be allowed to go to the public without some reply. Granting that Mr. Beacock has a right to ask for information, we think it would have been much more manly for him to ask the Treasurer for a statement, than to fly off to one of the public papers, with a long string of conclusions which he says are "currently reported." The amount, which he says has been paid to the Treasurer, is not as large as he states, by a good many hundred dollars, and will be all accounted for at the meeting of the Board in July. The Treasurer was prepared with his vouchers, in January to have his accounts audited, but, the immense amount of work which the Board was obliged to do in the five days of the session, to complete the examination of twenty-five students, compelled the members, although very reluctant to do so, to defer the auditing of the accounts until the next meeting. We are at a loss to understand what Mr. Beacock means by stating that the "members of the Board have met not less than four times during the last eight months," but, probably he knows; and probably he knows, too, what he means by stating "each" member has received something like ten dollars per diem."

As we said before, although the Treasurer does not admit the *right* of any one to examine his accounts, he has invariably allowed any dentist who wished, to look over every item, and ask any questions he chose, with regard to the disposition of the funds, as he does not consider that there is, or should be any secrecy about the matter but, he *cannot* publish any statement of the receipts and expenditures, until his accounts have been audited, and he has been authorized by the Board to publish such a statement.

C. S. C.

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#### HANGING MADE PLEASANT.

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There is every indication that by the aid of science, hanging may become more pleasant to criminals, as it is proposed to introduce chloroform on the gallows, and draw the bolt when the "patient" is in the last stage. Some of the tender hearted lambs in Ottawa, requested the Sheriff, at the late execution of their friend Whelan, to

give him chloroform; and we see that a Sheriff in Oneida County New York, actually did administer it to a criminal on the gallows, and that the bolt was not drawn until the victim was oblivious to the performance.

We have heard of the delightful mental impressions produced by chloroform, and it will be consoling to nervous individuals, condemned, "to be hanged by the neck until dead," if they will be permitted to kick the bucket during a sweet dream of elysium,—where they have little chance of going.

W. G. B.

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### EXOSTOSIS.

We have received from Mr. W. H. Card, of Whitby, a remarkable case of exostosis, by which the second and third right superior molars are firmly joined together, from the apices of the roots to the necks of the teeth. The third molar is a good deal decayed, and in attempting to extract it, the second molar was brought away with it. We do not remember having seen a case where the disease had extended so far as in this instance.

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### A SUBSCRIBER ASKS.

"Can you inform me how to obviate the objection to Os-artificial, when applied over sensitive dentine, as the pain on application is so extremely severe in many cases."

[Paint the cavity with a solution of gutta percha, or collodion previous to inserting the filling.]

W. G. B.

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## MISCELLANEOUS.

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### THE EFFECTS OF TOBACCO UPON THE TEETH.

BY S. S. BOZKATH, MILTON JUNCTION, IOWA.

MESSRS. EDITORS:—In the *Dental Office Laboratory* of November, I find an article with the above caption, and I have had my attention drawn constantly to that subject since I began practice, and as "in the multitude of counsellors there is wisdom," I have concluded to offer a few remarks upon the subject.

In the beginning, I will state that I do not use the weed in any form,

and do most heartily abominate the filthy habit, and if I should say anything that might seem to favor the use of tobacco, it cannot be said that self-indulgence in a nasty habit induces me to seek excuses for the use of it in others.

Although multitudes assert that they use tobacco, through a long lifetime, without injurious consequences to their systems, and many of our highest medical authorities assert that the ordinary use of tobacco does not have any deleterious effect upon the system, yet I think that any candid person who will look at the subject from an unbiassed stand-point, will admit that any agent that exerts so powerful an influence upon the nervous system and through that, upon the circulation and assimilation, must be productive of mischief when exerted continually. The constant strain upon the system, by its depressing influence, must inevitably result in derangement of function, and a corresponding influence upon the general health. And in so far as it does thus affect the general health, it does undoubtedly have an indirect deleterious effect upon the teeth. But I think the greatest evil is in the transmission of impaired constitutions to their offspring, which naturally and inevitably results from an enervated condition of the parents. I think the fearful tendency to decay in the teeth of the rising generation may be ascribed more to this than to any, and I had almost said, than to all other causes. And now for the direct effects.

Your first objection, "the wear upon the cusps of the teeth," is well taken, and cannot be disputed. But your second point, "the action upon the gums, and indirectly upon the vital structure of the teeth," we will examine a little.

That poisonous substances are used to some extent in the manufacture of tobacco, I suppose is doubted by no one; and our finely drawn theories would naturally lead us to conclude that even if tobacco itself were inert, these substances must be injurious, especially to the delicate structure of the gums and other mucous membranes of the mouth, and must be discarded, if we wish to maintain a healthy condition of these parts. But experience has amply demonstrated that theories are of value only, so far as they are sustained by the facts in the case. And the question at once arises, are those who habitually use tobacco more subject to diseases of the teeth and gums than are those who do not? My opportunities for observation have

not been so extensive, perhaps, as have been those of others, but so far as they go, I think I must say that such is not the case.

That tobacco may, abstractly, be injurious to the different structures of the mouth, and still be advisable under certain circumstances, or rather, that under certain circumstances it may be the least of two evils, I think may be demonstrated. The products of the fermentation of particles of food about the teeth and gums may be, and I think are, more injurious to the structures of the mouth than are the juices of tobacco; and these particles of food are removed, in a measure, in the process of chewing tobacco, and the products of their fermentation are so diluted and washed away by the increased flow of saliva, as to be comparatively harmless. Of course, if every one took the pains to keep their teeth clean, that all persons should, this theory would at once fall to the ground; but I think my observations warrant me in saying, that as a general rule those who indulge in this filthy practice are too careless in their habits of personal cleanliness to pay much attention to their teeth.

Your statement that you "have often found the tobacco juice permeating the cementum and dentine" of the teeth of tobacco users, is not altogether explicit. If the juice of tobacco does permeate the substance of sound and apparently healthy teeth, it would seem to require no argument to prove that it is injurious, as it is generally conceded that the presence of any substance in any of the tissues of the body, not necessary to the maintenance or building up of those tissues, is unfavorable to the maintenance of a healthy condition of the parts. But you did not inform us whether you had observed those conditions in sound teeth, or whether the fluids had found their way to the interior of the teeth, through carious openings, and thus entered the canaliculi through their interior openings.

It would appear that the excessive demands upon the salivary glands caused by the use of tobacco, must result in derangement of function, and thus by its impairment of the digestive powers, have a reflex action upon the teeth.

Let us theorize as we may, the matter must be determined by the facts in the case. This calls us back to the question—are those who use tobacco more subject to diseases of the mouth and teeth than those who do not use it?

As I said before, my observations do not warrant me in saying that they are ; but I would like to hear from others who are interested, as it is a subject of considerable importance.

## RECEIPTS FOR MAKING HILL'S STOPPING, OXY-CHLORIDE OF ZINC, & WOOD'S FUSIBLE METAL.

**HILL'S STOPPING.**—The following is the formula of the inventor. With pure gutta-percha in a plastic state, are mixed, quick lime, two parts, and quartz and feldspar, one part each, which latter are reduced to an impalpable powder, and kneaded into the mass as long as it will receive them without becoming brittle. Dissolve the gutta-percha in chloroform to almost a pasty consistence, then add the mineral substances and put into a vessel, suitable for evaporation of the chloroform. It should be made so thick that the silex would not fall to the bottom.

### OXY-CHLORIDE OF ZINC.

Refined Borax,.....1 part.  
Quartz,.....2 parts.

Triturate thoroughly in a mortar, then add gradually 45 parts of French Zinc white ; when perfectly incorporated, calcine in Hessian crucible, at a good red heat, for eight or ten minutes. This forms a frit, which, when cool, must be ground very fine, in small quantities, at once, together with trifling portions of colouring matter, such as yellow ocre or burnt umber.

To 2 part of the pulverized frit, add 3 parts of calcined Zinc, and combine thoroughly in a mortar. Bottle and stop tight. The more recently it is made, the better.

### SOLUTION FOR THE ABOVE.

Dry Salt Chloride of Zinc,.....1 ounce  
Water,.....6 drams  
Dissolve.

### WOOD'S FUSIBLE METAL.

Bismuth.....15 parts  
Lead.....8 do  
Tin.....4 do  
Cadmium.....3 do

PERSONAL.—We find the following in the *Brampton Times*, and can cordially endorse the sentiments therein contained:—It will be seen by our advertisement columns that R. Trotter, Esq., Dentist, who has been a resident of Brampton for many years, is about leaving this town to permanently reside in Guelph. Mr. Trotter has won for himself a deservedly high reputation in his profession, as well as of being a good citizen; and though many will regret his leaving this neighbourhood, yet he will take with him their good wishes for his future prosperity, with the hope that he may be successful in winning the same golden opinions of the people of Guelph and vicinity, as he has done in Brampton.—*Guelph Mercury*

## CASE OF DISLOCATION.

A man, who, several days since, dislocated his jaw, walked twelve miles to St. Peter, Minn., with his mouth agape, to have the disjoined member set right. To prevent a violent collision, the Surgeon's assistant insisted on inserting his thumb in the patient's mouth, until the doctor plainly indicated the danger, and placed in position a stout splinte. Upon crowding the jaw, it resumed its rightful place with such force as to snap the stick asunder, seeing which, the student rejoiced that he had withdrawn his thumb.

## CUTANEOUS ABSORPTION.

Professor Scoutetten, of Metz, has written to the Paris Academy of Medicine on the subject of cutaneous absorption. He maintains that the skin, when healthy, does not absorb; and that no bath whatever can have any effect on it. The doctor is so positive on this subject, that he offers himself to be experimented on by entering any bath containing poisonous substances, whether mineral or vegetable, provided they have no corrosive qualities. He further offers to pay a fine, of an amount to be fixed by the academy, if he be wrong; and declares himself ready to come to Paris at any time to place himself at the academy's disposal for that purpose.

## BOOTH'S REMAINS.

The remains of Booth, the assassin of President Lincoln, were recently identified by his younger brother beyond doubt by a peculiarly plugged tooth.

DENTAL PUNS:—When should you apply a sovereign remedy to your tooth? *Ans.*—when it is a-king.

Why does an aching tooth impose silence on the sufferer? *Ans.*—Because it makes him hold his jaw.

## EFFECTS OF MERCURY.

From a notice in the *Dublin Medical Press and Circular* of Dr. Murison's new book on Diseases of the Liver, &c., we find the following:—

"Take, for instance, the question of the action of mercury on which Dr. Hughes Bennett has been engaged in experiments for the British Medical Association, and whose conclusions thereanent so surprised the great body of practitioners. Dr. Murison has evidently carefully weighed the evidence, and he has come to a conclusion which is likely at present to receive the assent of the majority. He thinks that "mercury and allied purgatives probably produce bilious stools by irritating the upper part of the bowel, and sweeping on the bile before there is time for its absorption." He recognizes the fact that articles of food frequently give rise to similar effects, and thinks that their action is perfectly similar. From this we might suppose that other purgatives should be substituted more frequently than they are, and assuredly this view supports the American preference for podophyllin, or, as it is called sometimes in the States, "vegetable calomel." We could certainly say much in its favor. Dr. Murison considers calomel of great use in congestion of the liver, but if it increased the secretion of the bile, it would have an injurious effect.—He thinks it likely that "irritation of the duodenum by purgatives, may be reflected to the gall-bladder, and cause it to contract, and that the evacuation of the viscus may account in part for this increased quantity of bile on the stools." Dr. Murison's is a handy sized volume. The former half treats of enlargements of the liver, under the division of painful and painless enlargements. The latter includes gallstones, jaundice, hepatic pain, contractions, and abdominal dropsy. The cases upon which the lectures are founded are well selected and carefully related. Their study is likely to lead to more careful diagnosis and treatment."—*Boston Med. and Surg. Journal*.

A CLERICAL SURGEON.—Father Helyen, a Catholic priest of Boom, in Belgium, performed the Cæsarian operation on a young woman in order to baptize the infant before it died. The mother appears to have been living when the operation was commenced, but both mother and child succumbed. In his defence, the priest said that he performed the operation in obedience to the direct instructions of the archbishop. The instructions are now to be cancelled, and the clerical surgeon tried for murder.—*Med. and Surg. Reporter*.

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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KEEPING THE MOUTH DRY WHILE FILLING.

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BY C. S. CHITTENDEN.

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MR. EDITOR,—Will you be so kind as to tell me, through the columns of the Journal, what means to adopt to keep the mouth dry, while filling teeth in the lower jaw. In many cases, I find it impossible to keep back the saliva, while filling large cavities in the lower molar and bicuspid ; and as most of the Dentists of my acquaintance, are similarly troubled, I, with them, shall feel greatly obliged, if, in the next No. of the Journal, you will give us a few hints on the subject.

B. B.

The above is a sample of the numerous inquiries which have been made to me within the last few weeks, on this subject, and I propose to answer *all* enquirers, by giving the methods which I have adopted, and which have proved very successful in my hands. The "rubber dam," I consider to be the very best possible preventive to "flooding," when ever it can be employed. It should be from four to six inches square, and should be put over two or three teeth, and pressed down a little under the margin of the gum : then a strong piece of wetting cord, or stout thread should be passed around the tooth or teeth, and tied firmly, so as to prevent the rubber from rising. This is perfectly effectual, when it can be used, as I said before, but, unfortunately, I have met with many cases, where the mouth was so small, the buccinator

and masseter muscles so strong, and the cheeks so fat, that I could not by any means in my power, keep the rubber on the teeth. In such cases, I formerly used small napkins, made from linen birds-eye diaper, which I placed under the tongue and in the cavity of the cheek. By renewing the napkins as they became wet, I could almost always succeed in inserting very large fillings without trouble from the saliva, but the harsh nature of the diaper, frequently irritated the mouth so much as to be exceedingly unpleasant to the patient,

Recently, at the suggestion of a friend, I have been using strips of well worn cotton cloth, instead of linen napkins, with the happiest results. I tear the cotton into strips, from two to three inches in width, according to the size of the mouth to be operated upon, and roll them into rolls as thick as the circumstances of the case demand. I have several of these rolls at hand, so that I can change them from time to time should they become saturated with the saliva. When I am ready to commence filling, I take a *roll* of the size required and bend it into the shape of the letter U, and ask the patient to raise the tongue to the roof of the mouth, when I place the *bend* of the roll under the tongue, covering the ducts of the sublingual and sub-maxillary glands, and then push the ends of the roll back, and down, by the side of the tongue, thus elevating it into the centre of the mouth and forcing it away from the teeth. If the roll of cotton is properly put into the position indicated, and the ends of the U extended back far enough, the tongue and the salivary ducts under it, can be controlled almost perfectly, by getting the patient to hold the roll in position, with two of his fingers, one on each side. Then I take a small square pad of the cotton and place over the duct of Parotid gland, which will absorb most of the discharge from it, after which I place another roll between the alveolus and the cheek, to take up any excess of saliva from the Parotid gland, which the *pad* covering the duct of that gland may not retain, and then having turned the head over to the side opposite to the one on which I intend to operate, so that the saliva from the Parotid duct on the opposite side will not run across the mouth, I proceed to my operation of filling. If I find that the rolls have become saturated with saliva, I first see that my thumb and fore-finger are perfectly dry, when, clasping the tooth which I am filling between them, I remove the roll or rolls of cotton and put others in their place and proceed with my filling. In nineteen cases out of twenty there will be no necessity for changing the rolls, during a long operation.

In a future No. I propose to give the method which I frequently adopt for keeping the mouth dry, when filling difficult cavities in the superior Incisors.

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## NECROSIS OF A PART OF THE INFERIOR MAXILLARY BONE.

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BY CHARLES P. LENNOX.—CHATHAM

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I give an account of the following case in order to stimulate the younger members of the profession to action, by showing how easily aggravated forms of disease, sometimes yield to very simple remedies.

I am well aware that we all feel timid at times, when we are called upon to treat, what appears to be an aggravated case, calling for speedy and effective treatment, and feel more like referring the patient to the medical man, than contending with it ourselves.

A thorough knowledge of what we have to deal with, and the means necessary to restore the parts to health, are highly necessary. I would not advise any one to grapple with what he does not understand ; but would say in the words of the renowned Davy Crocket "be sure you are right, then go ahead."

On the 9th of February last, a german woman, of strong constitution and about forty years of age, was recommended to me to have an ulcerated tooth extracted, by her physician. I found upon inquiry, she had been suffering for five mouths, and that the tooth was free from caries or disease of any kind. I also discovered that the fangs of the inferior *dens sapientie* were remaining, having been broken by an unsuccessful attempt at extraction. There were two fistulous openings, one back of the second molar, and one in front of it, upon the side of the jaw, while the first molar was gone. The jaws could not be opened but remained fixed, and had been so for several weeks, the patient subsisting upon liquid food. I extracted, with difficulty, the remaining molar, and by an incision, exposed the bone, and after taking away the pieces of loose dead bone, the largest being an inch long, and three quarters of an inch wide, I injected a weak solution of Nitrate of silver, into the wound, and directed the patient to call in one week.

Upon the second visit the part gave a healthy appearance, the discharge had ceased, the mouth could be opened, patient free from pain, and to day enjoys good health.

## A LECTURE

*Delivered before the Union Dental Association at Toronto, by WM. CANNIFF, M. D., M. R. C. S., Eng., Prof. of Surgery, University Victoria College, and Secretary to the Canada Medical Association.*

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## PATHOLOGY OF THE TRIFACIAL, OR FIFTH PAIR OF NERVES.

(Continued.)

How frequently the dentist is consulted because of a severe tooth-ache. He finds upon examination there is positively no cavity. But the patient insists that a certain tooth shall be extracted which the skilled dentist reluctantly does; and the tooth is found to be perfectly sound; notwithstanding the extraction of the tooth the pain continues. Here was a sense of pain located in a sound tooth, due to a cause remotely situated. Again, there is a neuroma, a fibrous growth upon the nerve, or a tumour is pressing upon it which produces pain in another part. In these cases there is an incorrect message delivered, because the telegraph wire is injured and out of order.

Again on the other hand, how frequently is the medical man consulted concerning a severe pain, not in the teeth, not very near the jaws—neuralgia perhaps, or ear-ache; perhaps a want of sensation in a particular region, or a paralysis. After due examination he has no difficulty in arriving at the conclusion that some old fangs of a tooth, or an exposed nerve from caries is the cause of the ailment. He directs the patient to a dentist, who, by removing a root or two, cures him without medicine. In this case we see another form of deranged function; as soon, or shortly after the removal of the decayed tooth the neuralgia in the head, or arms, or elsewhere, as the case may be, is effectually removed. There is not only this uncertainty about the location in a single nerve, but the difficulty extends further. Perhaps the cause of pain is neither at the nerve centre nor at any of the periphery, nor in the course of the nerve which is painful. It may be in a remote branch of a common nerve, or in some portion of a nerve which is connected by anastomoses. The effects of the irritation are referred to a remote distribution. We have what is known as Referred Sensation, and this complication may be extensively increased by means of the sympathetic nerves and ganglia.

Before proceeding further upon this point, it is well to state that disease of a nerve, whether it be at its origin, along its course, or its

periphery, may be followed by two classes of symptoms. There may be change and increase of function ; or there may be loss of function ; that is, to say, the disease destroys the nerve so far as its sensibility is concerned. This loss of function may be partial and complete.—There may be paralysis—the paralysis may refer to motion, or it may refer to sensations, *incito-motary*. The paralysis may be of the *vaso motor* nerve fibres, causing passive congestion. The nutritive nerve fibres may be affected, by which irritation is much less active. Thus an irritation, starting from either the trunk, branches, or ultimate ramifications of nerves, may be led to exalted and altered function ; or, on the contrary, it may produce more or less paralysis. Instances of which are presented in such affections as epelipsy, tetanus, hysteria, cholera, hydrophobia, indeed, all convulsive affections ; also, delirium, coma, neuralgia, &c.

Thus, we have certain direct effects of irritation, whether peripheric or central ; or on the other hand, indirect or reflex.

These effects are :—1st. Contraction of muscles, often spasmodic ; 2nd. Referred Sensation, such as pricking, wrong feelings of heat, cold, &c.; 3rd. where the nutrition is affected.

Now, I wish to speak more particularly of referred sensation or irregular reflex action. Says Dr. Brown Séquard, “every form, every kind of paralysis, has been produced by a reflex action, caused by an irritation of a nerve. In children, especially, reflex paralysis is very frequent ; in adults, the muscles of the eye are very often paralysed by reflex action.” Neuralgia, or irritation of a dental nerve is often the cause of mydriasis or dilitation of the pupil. Likewise the various muscles of the eye have been found paralysed in cases of wound of the infra, or supra orbital nerves, or in cases of neuralgia. Cases of hemiplegia, that is, paralysis of one side of the body are recorded, in which the disease was limited to a part of a limb, as the face, or the eye, due to *tiedouloureux*. Dr. Shearman mentions a case of hemiplegia of the right limbs, caused by neuralgia of the right inferior maxillary nerve. Brown Séquard, records seventeen cases of hemiplegia from morbid reflex action, due to irritation of the fifth nerve near its origin, or of the *crus cerebelli*. Almost every Physician has met, with cases of hemiplegia, caused by a diseased tooth which was entirely removed by the extraction of the tooth.

Anæsthesia, loss of sensation, is not a rare thing, from morbid reflex action. One whole side of the face has been repeatedly affected,

which was due to neuralgia of the trifacial nerves of the same side. Brown Séquard mentions a case of anæsthesia of part of the forehead and face, in consequence of the irritation of a branch of the fifth pair on the cheek bone, by a bruise. I might continue to enumerate instances of morbid reflex action and sensation, in connection with the fifth pair of nerves, such as amaurosis, where there is diminution or complete loss of sight, without any external mark thereof, the optic nerve or retina, being affected. This is a not uncommon result by reflex action, of diseases of the supra-orbital or infra-orbital nerve, especially neuralgia; also, after injuries of those nerves. Many cases are recorded in which amaurosis was cured by curing the neuralgia. Indeed, there is no nerve which possesses so much power to cause reflex morbid function, as the fifth pair. This is, of course, due to the extensive nature of the distribution of this pair, as well as its numerous anastomoses.

Neuralgia, or *tic douloureux* is a term often used, without, perhaps, any specific idea as to its purport. We are prepared, however, to understand why such, should be the case. Neuralgia is characterized principally by acute pain, sudden in its onset and disappearance. It is due to pathological irritation of the nerve, by which the component elements of a nerve trunk are disturbed, and thereby incapacitated to carefully discharge their duty. It is akin to inflammatory action. Now, the primary irritation, we have seen may exist in the trunk of the nerve, or at the periphery of one of its branches. One of the most common sources of neuralgia is in connection with the fifth nerve, and it is very frequently seen arising in a small dental nerve where the tooth is decayed. Consequently, neuralgia of the face is by far the most ordinarily met with by the surgeon and the dentist. But neuralgia of the fifth nerve may be produced by other causes.—It may be the result of irritation in other nerves, while, also, an irritation of the nerves of the jaws may cause a neuralgia elsewhere than in the face. A few instances may be given:—Tumours on the head, pressing upon a nerve have caused neuralgia, and the removal of the tumour effectually cured the disease. An injury to a nerve on one side of the body has produced neuralgia upon the other side. Neuralgia of the left temple has resulted from a severe cut over the right parietal bone. Cases are recorded in which there was neuralgia of the arm, caused by an irritation of the dental nerve, from a decayed tooth. These were always cured by the extraction of the

decayed tooth. A tumour upon the inferior dental nerve has caused facial neuralgia. Dr. Green, of New York, has by removal of such tumour, cured the neuralgia. Repeatedly, division, or excision of a portion of the orbital nerve has removed neuralgia—sometimes of years standing. Burns, and the resulting cicatrix as well as wounds, have caused neuralgia, which nothing but excision would remove. Neuralgia is very likely to lead to alterations in nutrition, not alone the soft parts, but in the teeth. In all cases where there is disease of a dental nerve, during the period of growth, there will result defective formation of the tooth. And at any period of life, it will impair their integrity, and tend to decay.

In like manner deranged action of the nerve may cause morbid secretion, or completely arrest it, as of the saliva. It may induce cataract as well. These morbid secondary results may remain there after the primary and secondary causes have passed away, or have been cured; even after a portion of the nerve has been removed.

Again, neuralgia may lead to, or cause grayness of the hair, or some affection of the ear. Not unfrequently, neuralgia is complicated with Hysteria, a protean malady of constant occurrence. Instances are recorded in which Hysteria succeeded facial neuralgia, and came on regularly at the same hour of the day as the neuralgia had. Now there is an affection of the fifth nerve, extending to the nerve centre, beyond the origin of the roots. Similar cases are mentioned in which there was an exchange of a peripheral, for a central disorder. For instance neuralgia will sometimes terminate in mania, or melancholia occasionally the one will alternate with the other. An interesting case is mentioned by a German writer, of neuralgia of the left fifth nerve, which was followed by sensations of distress, a special feature of which was that the patient had not room enough; that everything round him was getting narrower and converging towards him; the walls seemed to be closing together round him, and the ceiling to be sinking down. If in the street, he appeared to be entering into a *cul de sac*, while crowds of people seemed to be pressing toward him. Here we have a reflected action characterized by abnormal ideas. The irritation of the nerve excites parts of the brain which are not involved in the neuralgia itself, just as we have in some cases, morbid co-sensations, in this we have morbid co-ideas, as result of the Hyperesthesia of the fifth nerve.

Now, it must be confessed, these various pathological facts are at

first somewhat confusing, and to understand them involves a perfect knowledge of the anatomy of the part affected, and in none more so than in connection with the Trifacial nerve; also one must possess a complete knowledge of the physiological action and then he is prepared to grasp the pathological facts referred to. The practicing dentist daily meets with cases of morbid action, direct and reflex. So while he has to possess particular mechanical knowledge in connection with the science of surgery, he is by right, called upon to make himself familiar with some of the more complex principles of physiology and pathology. It is not only his privilege; it is his duty. The earnest and successful efforts which the dentists of Ontario have made to elevate themselves by organization, and by securing Legislation which raises them to the position of a profession, and obtains security thereby to the public, against incompetent men, indicates the fact that they recognize at once their privilege and their duty.

The following appended case is taken from the *London Lancet* of a recent date. It was read before the Royal Chirurgical and Medical Society by Dr. Althaus. The case occurred in an otherwise healthy Australian. There were at first symptoms of inflammation, and afterwards compression and atrophy of the nerve. The case came under the authors care about two years after the commencement of the affection. There was then, total loss of muscular sensibility about the face, and a peculiar expression of the features in consequence of it. Vision was obstructed by leucoma of both cornea; yet the patient suffered much from photophobia, although little light could penetrate to the retina. An ophthalmoscopic examination of the fundus oculi showed optic disc, as far as it could be seen, quite normal. The common sensation of the face and scalp, was entirely lost on both sides. The sense of temperature was completely absent, and the senses of touch and locality were also lost: the conjunctiva was anæsthetic; the secretion of tears arrested, but there were pathological hypersecretion of conjunctival mucous. The mucous membrane of the nose was quite insensible, and its secretion much augmented; the sense of smell was in no way impaired. The mucous membrane of the mouth, including the tongue, was also anæsthetic. The secretion of saliva was arrested, but the flow of buccal mucous increased. The tongue had been severely bitten, as the patient was not at all aware of biting whenever he did so. The sense of taste was preserved. The muscles of mastication were paralysed; and the patient complained

of a rushing noise in the head, which was probably due to paralysis of the tensor tympani muscle, which is animated by the minor portion of the fifth nerve. The sense of hearing was normal, and there were no other morbid symptoms. The author therefore concluded that the pathological lesion was confined to the course of the fifth nerve between the pons varolii and the Gasserian ganglion. It could not be more peripheral, because not a single fibre of the trifacial nerve had escaped the injury ; and it could not be more central, because there was no symptom of disease of the pons. The treatment consisted in the systematic application of the continuous galvanic current ; no medicine was given ; after three months treatment the patient was considerably improved in every respect, &c.

Dr Althaus deduces interesting conclusions from this case. It shows that the eye for instance, may become intolerant of light from affection of the fifth nerve, and no doubt on the contrary disease of the Cornea may produce evil effects in other periphery. It shows that instead of the gustatory nerve being the exclusive nerve of taste : that another, the glosso-pharyngeal at least assists.

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## SELECTED ARTICLES.

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### MODERN SCIENCE OF DENTISTRY.

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In the *Boston Medical and Surgical Journal* of the 11th inst, we find an article on this subject, from the pen of Dr. Oliver Wendell Holmes, of Harvard University, written in such an exceedingly pleasing style, that we transcribe a portion of it for the benefit of our readers. The Doctor takes for his text, "The Dental Cosmos ; a monthly record of Dental Science ; observe, compare, reflect, record," and gives a review of the contents of the No. before him. Many of our readers being also readers of the Cosmos, we leave out those portions which refer to that Journal, as we have not space for the whole article.—ED.

"The formation of a Dental School in connection with the Medical Department of Harvard University, naturally draws the attention of those engaged in medical teaching to the branch which has sought and gained their alliance. It soon becomes apparent that Dentistry has assumed an importance as a speciality of the healing art, which challenges for it an honorable recognition. The Dentist of to-day stands in the same relation to the tooth-puller of a past generation, as the surgeon, of our time to the well-remembered worthy of the razor and the lancet, who trimmed his customers hair or breathed a vein for him with equal skill and science.

Two arts are absolutely necessary to make old age tolerable ; that of the optician, and that of the dentist. Take away the old man's spectacles and leave his jaws to be dismantled without repair, and what will life be worth to him ? No wonder those very sensible people we call savages, not having either of these helps, expect their children to see that they are not left to such a fate. When the eyes of the venerable warrior can no longer read the literature tattooed on his enemy's skin, when he has lost his teeth and can no longer do justice to the *pièce de résistance* furnished by the last skirmish of the tribe, his eldest son kindly dismisses him by a single blow of his war-club to that better region where the good cannibals go, and become vegetable feeders, as we charitably trust.

What would the old age of civilized life be—even in *Boston*—without convex lenses to help the failing sight ; jaunty eye-glasses for public occasions, honest old straddling spectacles for solitude ? No "Advertiser"—no "Transcript"—no "Atlantic"—no "Every Saturday"—no "Boston Medical and Surgical Journal"—would not the wretched dweller by the Frog-pond be glad to introduce the popular institutions of the South-sea islanders ?

Or take that other wrong of advancing years, the bitterest insult to the decaying bodily fabric which precedes the last "disgrace and ignominy of our natures," as death is spoken of by Sir Thomas Brown.

To have the broad manly jaws, once glittering with enamelled ivory, changed to the miserable likeness of a turtle's, by the gradual absorption and thinning of their edges ; to meet one's friend with a face that shuts up like an accordeon ; to mumble inarticulate words with organs that once held the listener captive with speech or song ; to come back of necessity to the pulpy food of childhood, without its innocent appetite and unquestionable digestion—what a fate to think of ! and yet that is what nature has in store for the old, and for many who are not old, save that art comes in and with infinite skill and almost miraculous success arrests the progress of destruction, and repairs, and restores the waste that Time has already made. That was a most impressive testimony to the need of these organs to make life tolerable which was reported a few years since, in one of our periodicals, of a celebrated personage. He had lost his mind, he said, but that he could do without, but he had lost his teeth and could not eat—this was the burden of his old age.

Those who have been led to take an interest in dental matters will be glad to know where they can learn of the condition and progress of an art which is every day coming nearer to a science.

And lastly, we may mention as of the first importance for the consideration of every dentist, an article by Dr. J. T. Codman, of Boston, on "Artistic or Expressional Dentristry." It is perfectly true, as Dr. Codman says, that the natural teeth are the best guide in replacing those which are gone ; but if these are all lost, judgement and the eye of an artist are necessary to give or restore the normal expression.

How many pitiable instances does this very useful paper recall of friends whom we have known as public characters, whom we knew by their portraits, whose whole physiognomy has been utterly changed by their dentist! Perhaps the contour of Washington's majestic face could not have been preserved after he was forced to trust himself in the hands of the dentist, but one cannot help thinking that if some of our skilful practitioners of to day had had the shaping of that immortal *ratelier* which lies behind the lips to which the statuary and the painter tried in vain to give expression, the Father of his Country would have looked upon us with a still nobler aspect. And with what a sad surprise do we greet our friend who has just come from the hands of some tasteless workman in dental porcelain, who has filled his mouth with a set of "dominoes" as the pugilists call them, staring, and glaring, and cheating him of all his natural expression, so that to talk with him is like making a new acquaintance, and we feel as if we were taking a liberty in speaking without an introduction!

The Dental Profession is doing itself great honor by the breadth of the studies which it encourages as well as by the vast amount of ingenuity which it calls into exercise. The debt of mankind to its labors is incalculable. Many a man, still more many a woman, would rather not live at all, than live disgraced by the wrongs of nature—if we may lay the fault to nature and not to artificial habits—shut out from all the charms of social intercourse by imperfect articulation and the sense of deformity, and it may be, condemned to invalidism by failure of the first process of reduction of the food. There is nothing the dental art does not attempt, and hardly anything within the bounds of reasonable belief it does not accomplish. It fills the teeth that would have gone in a year, and makes them last a life-time. It builds up a new fabric on what seemed the most worthless foundations, until like a monarch, the ancient fang wears a crown of solid gold, and the miracle of the legend is made an every-day fact. It straightens the most perverse irregularities, weeds the over-crowded arches, fills the gap which disenchanted the smile of beauty, enamelling the delicate substitute to the exact shade of the lost pearl, lulls the patient into a pleasing trance while it clears away the incumbrances that no longer serve him, and makes him once more comely and happy with a third dentition of gold and porcelain.

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### ALVEOLAR ABSCESS.

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BY DR. W. H. SHADOAN.

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(Continued from page 182.)

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### POINTS OF ESCAPE.

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There are, perhaps, as many points of escape of the pus of abscesses

as there are different points of attack. As a general rule, the pus will find an opening through the most yielding part involved. If an incisor is affected, it is usually at the apex of the root; especially if it is an inferior tooth; but here we will remark that the six anterior inferior teeth, are rarely ever affected with abscess. Should such be the case it will be at the apex of the root. Not so with the superior incisors; they may be affected very often, and at various points. If abscess be produced from a dead or decaying nerve it will be at the apex of the root, and the opening will be at that point, but not always, though usually through the external wall of the alveolus. If the tooth thus affected be a central incisor, the opening may take a central or anterior course; in that event, when the pus reaches the suture, it will take its course along that suture, and find an escape at the posterior border of the hard palate. There are cases on record where the pus passed over the floor of the nasal cavity, and was discharged at the soft palate. Such cases, however, are seldom met with. The cases most usually met with, are those that discharge through the anterior wall of the alveolar process, at the apex of the root. There is very little difference in points of attack, as well as of discharge, in any of the ten anterior teeth. They have single roots, except occasionally the first bicuspid, which are sometimes double. If a molar of the superior maxilla be the seat of an abscess, it may be at the point of the roots, at the bifurcation, or on one side of the root; if the apex of the palatine root, the pus will usually be discharged through the process at the point of the root, or it may traverse the alveolus for some distance before it is discharged; the most usual is at the point opposite the apex. Abscesses of the buccal roots discharge their contents through the outer wall and usually at the nearest points. If the anterior buccal root has an abscess at the apex, it is sometimes the case that the discharge is into the maxillary sinus. When this is the case the treatment is complicated. The discharge from a third molar may be an inch or two from the seat of the disease, owing to its situation. There have been cases where the discharge was on the angle of the jaw, or on the side of the neck, and one or two cases where the pus escaped on the back part of the shoulder. A case of this kind was described to me, by an old and experienced Dentist some time since. In the inferior third molars, the discharge may be on the inner side, of the jaw, or at the lower edge, and is sometimes mistaken for scrofula, especially if the patient be of a scrofulous diathesis. The discharge from

the first and second inferior molars is always or nearly so, at the point of attack.

Before dismissing this part of the subject I will mention a few cases met with in my own practice :

*First Case.*—A little boy about eight years' of age—of a manifest scrofulous diathesis, was brought to my office for consultation. On examination, I found large abscesses (or an abscess,) situated at the first and second left superior temporary molars, ulcerated at the roots and discharging the pus over the posterior angle of the malar bone, just under the canthus of the eye. I inserted the probang, and could distinctly feel the permanent teeth.

*Second Case.*—A lady has an abscess at the apex of the root of the left superior lateral incisor, it discharged pus at the apex ; in a few days she called to have it further treated as it seemed somewhat indolent. After giving it such treatment as I considered necessary, she asked me to look at the other side of her mouth, where, to my astonishment, I found a lump as large as a hazel nut, which, on being opened, was found to contain pus ; a further examination showed that the latter proceeded from the left side of the mouth. Here were two points of discharge from one abscess, one at the point of the root affected, and the other at a point between the right lateral and cuspidatus, a distance of at least one inch from the first. Another feature in this case is, that the whole face swelled, and beneath the right angle of the inferior jaw was swollen more than any other part. At one time I feared that suppuration might possibly take place at that point. The cause of so much swelling and inflammation was, I think, the malarious condition of the system. I have failed to say that the external opening may be through the gum and into the mouth, or it may be through the cheek and skin, making its appearance on the face, and if it be a lower tooth the pus may be discharged through the jaw avoiding the mouth altogether. A very remarkable case of fistulous opening through the inferior maxillary is reported by Mr. Bell, and on account of its singularity, I give his report, believing that it will be of benefit to some who have not seen it. This had resulted from an abscess in the socket of a dens sapientiae of the inferior maxilla. The discharge had been kept up for two years previous to the time that the case was submitted to Dr. Bell for treatment. "At this time a funnel shaped depression existed in the skin, which could be seen to the depth of three-quarters of an inch, and a small probe could be passed through it into the sac

of the abscess underneath the root of the tooth. The abscess had now remained open for nearly two years, during the latter of which, the parts had been in the state I have described them. I removed the tooth, and as I had anticipated, no further secretion of pus took place but so perfectly had the communication been established, that when the gum healed, it left, by its own contraction, a fistulous opening, through which any fluid received into the mouth passed readily to the cheek, and I could, with care, introduce a fine probe completely through the passage. So free, in fact, was the communication that some of the hairs of the whiskers, with which the external portion of the depression was filled, grew through the external opening and appeared in the mouth,"

#### PUS.

Pus, under all circumstances, is nearly the same, and all chemists give to it the same chemical constituents. Pus, of a good or healthy quality, is of a creamy appearance, of a yellowish white color, inodorous, and opaque. Alcohol and heat coagulate it. In an analysis, by Schuilque it was found to contain albumen and water, a particular extractive substance, and a small quantity of soda, phosphate of lime, and other salts. "Normal pus consists essentially of two distinct parts: pus corpuscles, or pus globules, and a colorless, aqueous fluid liquor puris, in which the corpuscles are suspended." A variety of globules or corpuscles are described by other chemists, but the above is sufficient for our purpose, hence, we will not occupy space in describing them.

Unhealthy pus, the kind usually found in abscesses of an ichorous character, is very irritating to the parts affected, and as long as that condition exists the parts will remain in a diseased condition. It is of a thin dark appearance, and is irritating.

"Although it is true that such pus as is called healthy, indicates a convalescent state of an ulcer or abscess, the inference to be drawn from its appearance attaches exclusively to the parts which secrete it while it may herald the abatement of local inflammation, it may, at the same time, give clear evidence of a state of disease incompatible with integrity of organs, or with life itself. Suppuration of the eye, liver, or of the lungs, would be a very serious matter, however healthy the pus might be."\*

Some writers have considered suppuration a curative process, and

have regarded the pus a valuable covering for the granulations or new growth of flesh, and so it is in some cases, but there are many exceptions.

Some parts of the body have a much greater disposition to form pus when inflamed than others. The cellular tissue, skin, and mucous membrane are very prone to suppurate, while the fibrous tissues manifest no disposition to it.

"Pus, is modified, by the nature of the part where it is formed, by the constitution of the individual, by various accidents occurring in the process of its formation, and by certain obscure laws which control the phenomena of these affections, which are called specific. It will also present different appearances, as it may be mixed with other fluids, as blood, saliva, bronchial mucus, etc."†

"When pus is irritating it is not so to the surface which secretes it but to the adjoining healthy structure over which it flows.

"Pus is heavier than water, and this quality assists us in distinguishing it from mucus.

"Mr. Hunter is of opinion that it is coagulable in muriate of ammonia, which peculiarity distinguished it from mucus and all other natural secretions, but this test was disputed.

"From the fact that hard and inflammatory tumors, in the course of inflammation become soft and yielding, and filled with pus, it was naturally supposed that the original solid parts were converted into this fluid, it is now well ascertained that such is not the case, but that pus is secreted by the arteries.‡—*Dental Register*.

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†Macartney on Inflammation.

‡Bond's Dental Medecine

(*To be continued.*)

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## FILING TEETH—DR. ARTHUR'S METHOD.

BY JAMES TRUMAN, D. D. S.

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The discussion of this subject, at the present time, in the various Dental Associations, is but another evidence of the disposition to adopt at one period, practices that have been discarded at a previous one as valueless, or absolutely injurious. It is undoubtedly true, that in all the modes of practice that have at various times been introduced in our profession, and been abandoned, there has been a large admix-

ture of truth, with a still greater amount of error. That this is true of filing teeth, must be evident to any one who will take the trouble to read the history of dentistry for the past hundred years. It is within the knowledge of all, that filing was mainly practised as a preventive of caries during the last, and the first twenty years of the present century. The skilful use of this instrument entitled the individual to rank high as an operator with the public, in France, England, and in this country. But we find writers in the latter part of the last century condemning the practice as dangerous and destructive to the teeth. Berdmore,\* writing in 1770, speaks thus of this operation: "It cannot be supposed that any man is so lost to shame and humanity as to expose his patient to pain and inconvenience during life, merely for the sake of a trifling fee. The indiscriminate filing of teeth, so common at present, should be imputed only to ignorance, and may, I hope, be checked, by placing the subject in a clear light, and by *drawing the line* to distinguish where it may and where it may not be practiced with safety." He then proceeds to give his views when it is expedient to use this instrument, which generally accord with present practices.

This able author had the clearest and best practical ideas of his day, and in many respects we have failed to improve upon the modes adopted and promulgated in his work. His opinion is, therefore, to be received with weight in considering the effects of this practice. But, while it is evident that the percentage of failures at that and subsequent periods must have been largely in excess of successes, we, it seems to me, have no reason therefore to conclude that no permanent good resulted from the practice. A large allowance must be made for the modes adopted, and for the evident want of knowledge in practical details and of the minute structure of the teeth.

Gradually, separating teeth by the file fell into disuse, until many excellent operators almost altogether abandoned it. I have long been satisfied that this is a practical error—believing that, where judiciously used it is one of our most valuable instruments. It must be evident to every practitioner, that a wholesale destruction of teeth is going on yearly, from a want of knowledge when and how teeth should be separated by the file. The prejudices that surround this subject prevent a clear judgement, and lead to fallacious reasoning.

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\*A Treatise on the Disorders and Deformities of Teeth and Gums, by Thomas Berdmore, London, 1770.

The propositions laid down by Dr. Arthur, as a basis of reasoning and practice, are as follows :

“1st. That caries will attack the proximate surfaces of all the teeth, except the inferior incisors, of the great majority of persons of the better classes in the United States of the present day.

“When caries of the superior incisors occurs on the proximate surfaces, previously to the twelfth year, its occurrence, sooner or later, on the same surfaces of all the teeth, except the inferior incisors, is almost certain. In the greater number of such cases, the caries will show itself before the twenty-fifth year. This predisposition to caries is greater in the female sex.

“2nd. That caries is not liable to occur at the points indicated, unless the teeth are in contact.

“3rd. That an artificial, permanent separation of the teeth will arrest superficial caries, or prevent its occurrence, if the attack has not actually begun.

“4th. That it is a popular fallacy to suppose that caries necessarily follows the removal of enamel.

“5th. That the most efficient means of preserving the teeth is to anticipate the attack of caries by separating them, when it is ascertained that caries is likely to occur on the proximate surfaces.”

The position laid down by Dr. A., that when the caries attacks the superior incisors previously to the twelfth year, that it will also attack the proximate surfaces of all the teeth, except the inferior incisors, cannot be successfully controverted. The teeth, in their various degrees of development, are necessarily subjected to the same influences that operate either to the benefit or injury of the structure. If therefore, caries be found on the proximate surfaces of the incisors, it may reasonably be inferred, that sooner or later it will make its appearance on all the teeth mentioned. Where this result does not follow, it must be from one of two causes :

1st. That the proximate surfaces of the teeth are not closely in contact, and admit freely the passage of the brush or fluids between.

2nd. That the patient by the exercise of constant care, has kept the surfaces free from all collections.

When decay attacks the incisors at a later period in life, it does not necessarily follow that the surfaces mentioned will be affected.

If, then, this position be true, it becomes a question of serious import whether, if one of the incisors be decayed at this early period, we

should at once proceed to make a separation in the balance to avoid the results almost certain to follow? I understand Dr. A. to answer, "that it is the best practice to make the separation before the progress of the caries has rendered this method of treatment impossible."

While I endorse the fact that caries will attack these anterior teeth, I do not think it advisable to enter at once upon the separation of all the proximate surfaces anterior to the bicuspid. There is always a doubt whether this result will follow, and we should give the teeth the benefit of this doubt, and wait until decay manifests itself. I make exception in the case of these anterior teeth, because they, above all others, are immediately under the supervision of the operator and patient; very few of the latter will permit caries to make any progress before calling the attention of the dentist to the fact. Separation can then be made of the proper form, and the simple cavity filled producing no disfigurement to the tooth.

The same reasoning and mode of practice does not, it seems to me, hold good with the bicuspids. Further removed from observation, and closely pressed together on their proximate surfaces, the ordinary opportunities for observation are not present.

Without entering into the theories of caries, that have at various times been promulgated, I may say in brief, that the destructive agent, having once effected a lodgment, soon breaks down the tubular structure of the dentine, and that is removed with great rapidity, without a corresponding loss of the hard enamel tissue. This is the process common to all the teeth.

We find in the proximate surfaces of bicuspids, superior and inferior, caries penetrating the teeth at the point of juncture of the surfaces, or slightly above it. It will then pass into the dentine, and very commonly destroy a large interior surface, before either dentist or patient is aware of the fact. To the properly educated eye, this progress of caries is manifested from its first entrance into the dentine, by the slight change of color of the enamel. If this infallible sign were always observed and attended to, there would be but little difficulty in the management of these teeth, but, that it is almost entirely neglected, is patent to all observers. The teeth are allowed to remain until the cavity is exposed by the breaking of the surrounding wall, or the pulp is nearly or entirely exposed, producing pain.

Caries may, however, be present in the enamel and give no indica-

tion ; indeed, I think it may truthfully be asserted that the majority of patients have these teeth at some stage of disease.

Now, admitting these to be facts, what would seem to be the proper course ? Certainly the whole duty of the operator has not been performed if he neglects to separate these teeth thoroughly, before leaving the case. This has been my practice for a long time, and one forced upon me by the observations of experience. Hence, whether the blue tinge be present or not, the teeth are filed freely, fully believing that if there be no decay, the separation will go far to prevent it, and if it be present, I am equally prepared to meet it.

The objections to filing the bicuspid, by those who admit their constant liability to decay, is based on the fact that it involves the destruction of so much good tissue, and that this cannot be done without injuring the shape of the tooth at the masticating surface, the mode usually adopted being to remove mainly from the lingual and palatine surfaces, and but little from the buccal. I do not see the force of the objection. That there will be a trifling disfigurement is admitted, but it is almost entirely hidden from view. The advantages derived more than counterbalance this objection.

The other and more important one is, that all filed surfaces are more liable to attacks of caries than those covered by enamel. This would perhaps, be true in practice, as it seems reasonable in theory, were it not that the fact is well known that an abraded surface of dentine never remains in the condition of a tissue with a series of open-mouthed tubes.

We see this beautifully illustrated in the deposition of secondary tissue in the pulp, as fast as attrition removes the crown, in its near approach to that organ. Here the constant but slight irritation renews the formative process, and a further deposition of calcareous particles and the formation of the irregular tissue, called osteo, or secondary dentine, takes place. This approximates dentine in its formation but has none of its regular tubular structure.

Another illustration may be found in the increased deposition of cementum in exostosis, produced by constant irritation. A better illustration may be seen on those masticating surfaces extensively worn by opposing teeth. The surface here presents almost the density and polish of the enamel. The same result is witnessed in the arrestation of caries by the consolidation of the tubes, with their contents, into one solid mass.

Reasoning, therefore, from analogy, all filed surfaces must, to a greater or less extent, partake of a similar character. Consolidation must necessarily take place, opposing any further encroachments of disease, with ordinary care.

If this be admitted, what possible injury can result in the use of the file, if the surface be subsequently properly polished? I have no hesitation in asserting that no evil results can follow.

Having considered some of the objections, what may we hope for in the way of benefits? In the first place, we obviate the danger of excessive loss of structure, which delay invariably occasions, in these important teeth. We give the patient ample opportunity to free the teeth from all particles of food, secretions, &c. In a word, we insure the teeth for an indefinite future of usefulness. On the other hand he who neglects them until decay has manifested itself; and some portion of the walls have broken away, has a tooth always unreliable, and one infinitely more of a disfigurement to the mouth.

The rule must be observed to form the spaces of a shape that will not only prevent the proximate surfaces from coming together, but that they may be readily freed from all secretions. To save the appearance of the tooth, the broadest separation must necessarily be made toward the palatine and lingual walls.

The whole process of filing may, and in all probability will, prove a failure, if the finishing process be not performed thoroughly. Any roughness left furnishes a lodgment for the materials necessary to produce the commencement of caries. The same care should be exercised here as in the finishing of fillings, and for the same reason. The most active ingredients in the oral secretions are those microscopic in their character; hence, depressions, however minute they may be, will probably cause a renewal of disease.—*Dental Times*.

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#### THE CANADA JOURNAL OF DENTAL SCIENCE, REDIVIVUS.

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We dry our eyes on our editorial pen wiper, and put our sobs away to sleep. We feared that our sprightly friend "over the border" was defunct—frozen up in the snow; but are relieved by seeing his pleasant face again at our sanctum, as "good as new." Dr. Beers has called Drs. Trotter and Chittenden to his staff, and these gentlemen will run the machine to the benefit of the profession. We wish suc-

cess to the brave little "Cannuck." We have dental lions over here, beside whom the British Lion dare not wag his tail, yet when the Canadian animal comes to us in this most acceptable way, we say, "Long may he wave."—*Dental Office and Laboratory.*

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### BIBLIOGRAPHICAL.

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#### PRONOUNCING MEDICAL LEXICON.

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*By C. H. CLEAVLAND, M. D. 11th Edition. Lindsay & Blackiston, Philadelphia. 1869. 302 pages.*—This very neatly got up lexicon has reached us, and we take pleasure in recommending it to the Dental as well as the Medical practitioner. It is so common to hear mistakes of pronunciation of terms used in medicine and the collateral sciences, that such a work as the above cannot fail to be a desideratum. Correct pronunciation is of as much importance in speaking, as correct spelling is in writing, and that there is need of some good guide is felt by many whose knowledge of medicine cannot be doubted. This little work will fill the gap. An addenda is appended containing abbreviations used in prescriptions, and list of poisons and their antidotes.

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### CORRESPONDENCE.

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*To the Editors of the Canada Journal of Dental Science:*

GENTLEMEN,—At the meeting of the Dental Association, held at Cobourg in July 1867, a resolution was adopted condemning the public display of Dental show-cases.

Although not expressed in so many words, yet it was the tacit understanding that the carrying out of this resolution was to be one of the conditions of membership.

I would be glad to be informed, whether that resolution was rescinded by the Union Dental Association of Ontario, or whether it is still in force.

The reason of my enquiry is, I notice that a Dentist who was admitted a member of the Association in January last, still displays his show-case in the street.

Will you kindly inform me what steps to take, to bring before our Association, this offence (if offence it be) against our rule.

I remain,

Yours, &c.,

C. C.

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### ANSWER.

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The resolution passed at Cobourg anent the displaying of Dental show-cases was not rescinded by the Union Society, but is in force still, and we hope will always remain so. We can imagine nothing more savoring of quackery than this. Fancy a Physician hanging out a showcase filled with pills, plasters; boluses, etc,—A Surgeon, one filled with saws, scalpels, trephining instruments, etc,—or an Obstetrician, his forceps, for the purpose of advertising himself, and when one has learned to admire that practice, he may be brought a step lower and learn to think it is fit and proper for a Dentist to hang out his show-case. No Mr. C. C. that resolution was not rescinded, and it is clearly your duty either to inform the Secretary of the Association of this breach of the spirit of the resolution, and ask him to remonstrate with the offender; or to bring the matter before the Association at its next meeting, when, the case will be disposed of summarily, or we greatly mistake the feeling of members of the profession on the subject.

C. S. C.

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## EDITORIAL.

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### THE ACT RESPECTING DENTISTRY.

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On the 4th. of this month, the "Act respecting Dentistry" came into full effect, one year having elapsed, since the Bill was signed by the Lieutenant Governor, since which, all Dentists were allowed, by law, to practice without any restrictions.

Since the passage of the act, something over a hundred of the Dentists of the province, having complied with the requirements of the Board of Directors, appointed by the act, have been granted Licences: while to a smaller number, as compared with the number of those who have applied, Licences have been refused.

During the early part of the last session of Parliament, a few, who thought that compliance with the requirements of the board would

"affect their interests prejudicially," petitioned Parliament to repeal that portion of the Act, compelling all dentists who had not had an established office practice for the five years, to submit to an examination, and really there seemed, for a short time, to be great danger, of our losing one of the best provisions of the Bill. Upon more mature consideration of the question, however, on the part of the promoters of the "Repeal," they consented to withdraw all opposition to the Act as originally passed, and came forward in January, and passed the required examination.

Now, that so large a majority of the members of the Profession have become interested in maintaining the Law, it is not at all probable that any attempts will be made to induce Parliament to amend the Act, by making it less stringent, in its provisions than it now is.

Undoubtedly the Act is badly drawn up, and ambiguous in some of its parts, and decidedly defective in others. We think that the *number* of the members of the board should be reduced. Surely, seven members are enough to do all the business. By reducing the number to seven a great saving of expenses could be made.

Again the times fixed by the Act for the meeting of the Board, is, in our opinion, injudicious. The Board *must* meet the third Tuesday in January, and pass all who have made application before that time. Now, suppose, that the members of the Board should decide to open a Dental College, as it is most probable they will, it will be impossible for them to pass those attending, as there will not be time to give a course of Lectures, ending at that season of the year, more particularly, as we understand that it is intended to ask one or both Medical schools in Toronto to allow the students in Dentistry to attend the Lectures in Anatomy, Physiology, Chemistry, etc, in those Institutions.

Then, the time for holding the elections for subsequent Boards is fixed for the first Tuesday in June, thus compelling all who wish to vote, to go to Toronto for that express purpose. We think that such change should be made as would allow the Dentists of the country to elect subsequent Boards, while attending the meetings of the Association. These are some of the more important changes which we think ought to be made in the Act, but, we question very much, whether it would be advisable to ask for any amendments in it, until we have carefully tested its working for a few years.

It could hardly be expected that *we* should get an act that would

please all parties, when we see our brethren of the Medical Profession so generally dissatisfied with theirs. Defective as our Act is, it is infinitely preferable to any of the Bills, which have been passed in the States.

C. S. C.

### JAPANESE DENTISTRY.

They have Dentists in Japan, who evidently do not enjoy the benefits of Dental Associations and Journals. The Japanese are a remarkable people ; their jugglers are unsurpassed : but commend us not to their Dentists. Their manner of extracting a tooth must be tempting to their patients and reminds one of the method of removing a rusty screw. The tooth is tapped with a mallet, until it can be extracted with the fingers ; pleasantly suggestive of an amount of malleting, which we should think would'nt commend Japanese Dentistry. Does anyone know the Japanese fee for extracting, and whether "a young man from the country."—a friend of ours,—would be likely to find a favorable opening for practice in Jeddo, without incurring the risk of disembowelment?

W. G. B.

### DENTAL ASSOCIATION OF THE PROVINCE OF QUEBEC.

The bill to incorporate the above Association has passed a third reading and become law. Several important alterations have been made in it, and, as it is a matter of interest to the profession at large we will publish it entire in our next number. Much credit is due to Dr. Bernard,—The Father of Canadian Dentistry,—who went to Quebec and pushed matters until brought to a climax.

W. G. B.

### THANKS TO DENTAL OFFICE AND LABORATORY.

Thanks to our friends of the "Dental Office and Laboratory," for their spicy notice of the re-appearance of this Journal. It is true it has had some chilling influences to contend against, and has been in a state of torpidity, but with the re-animating rays of a united profession, turns out with the vigor of Bruin in spring. The necessities of those over whom the old lion has had control, have not been so

great to require him to devote his talents to the science and art of Dentistry, as those of our cousins across the lines. Their Dental as well as their mental and general physical constitution being very vigorous, the giving to the world songs and literature, which will be sung and read, as long as the English language is spoken, and the building and manning of Iron Clads, are better suited to his calibre than the construction of artificial dentures. And the young dental Lion of the north on this side of the Atlantic, when as old as the big bird south of us, if we may judge from his progress for the last five years, will be able to go over to our friends, with the vigor of Goths and Vandals, and not only "wag his tail" but growl a little.—May the hinges of friendship never rust, on which the spicy and valuable Dental Office and Laboratory, and this humble Journal, turn.

R. T

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#### TO OUR SUBSCRIBERS.

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With this No. our subscribers will have received the Journal for two thirds of the year. About one-half only have sent in their subscriptions. We do not wish to be continually "dunning," but we really need the money now due us, and will feel greatly obliged, if all who have not yet done so, will remit to us at once. We fancied that the Printer looked a little "squint-eyed" at us, a day or two ago, and we hope we shall not be compelled to turn such a *glance* towards our subscribers.

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THE DENTAL ACT OF THE PROVINCE OF QUEBEC.—We regret that we are unable to publish the act incorporating the Dental Association of Quebec, in this number as we promised. It was not received till the last moment before going to press.

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NOTICES OF THE PRESS.—We have received quite a number of favorable notices of the *Journal* from the Press of Canada and the States, for which we return our most hearty thanks. We hope to be able, with the assistance of our brethren in the Profession, to conduct it in such a manner, in the future, as to merit the kind words and wishes which we have received.

## MISCELLANEOUS.

## PROTOXIDE OF NITROGEN AS AN ANÆSTHETIC.

A preliminary report of the Committee of the Odontological Society of Great Britian was presented by Mr. W. A. Harrison, Chairman of the Committee, at a crowded meeting of the Odontological Society on Monday evening. By the kind permisson of Mr. Harrison, we are enabled to give a digest of the Report ; but this we must however, curtail more than we would otherwise have done, owing to pressure on space.

The Committee, after paying a just tribute to the great service done by Dr. Evans in introducing the gas successfully as an anæsthetic into this country, proceed, in the first place, to consider in detail, how far nitrous oxide gas is an efficient anæsthetic. To ascertain this, experiments upon various lower animals were instituted. From these, they arrived at the conclusion that it was free from atmospheric air, a powerful anæsthetic, more rapid in its action, although more evanescent than chloroform and other anæsthetics ; and that, although, if pushed, it produced death, still the animals were often speedily brought round, when apparently dead, by the admission of air.

They next proceeded to arrive, if possible, at the conclusion whether as an anæsthetic in man, it was as safe as, or safer than, those in general use. To this they give a guarded answer for the present ; stating however, that it is at least as safe, for short operations as any other anæsthetic.

They next enumerate the conclusions arrived at, founded on 138 cases watched and carefully reported on by the various members of the Committee, and on 1051 cases reported to them on trustworthy authority, as to the advantages and disadvantages of the gas. The advantages are, shortly, these : the rapidity of its effects in producing anæsthesia, the shortest time being twenty-five seconds ; rapidity in recovery ; its agreeable nature ; its being tasteless and less irritating ; almost entire freedom from nausea and vomiting, occuring in less than one per cent, ; absence of headache and vertigo as a general rule, after complete recovery from the anæsthesia. The disadvantages are not as consisting in its unsuitableness for long operations on account of the rapidity of recovery ; in the difficulty of making and transporting the gas, and also the expense of the agent : its being troublesome to make, and requiring unusually complicated apparatus in its administration :

in the undesirability of quick recovery in operations followed by much pain ; in the administration being accompanied by twitchings which render it unsuitable for delicate operations.

The Committee next foot up the physiology of its action, with the view to obviate, if possible, any serious results which might follow in its administration. They confess they are as yet unable to explain the *rationale* of its action ; but recommend, from experience with lower animals, that, when dangerous symptoms appear, the exhibition be at once suspended, and, should respiration not take place, artificial respiration be resorted to.

The Committee recommend, as the best, most convenient, and cheapest method of procuring the gas in a pure state, the plan of Messrs. John Bell & Co. In its administration, they observe that, whatever instrument is employed, it ought to be as air tight as possible ; but they offer, nothing fresh, of importance, in this respect, or in the mode of administration. There are, however, a quantity of useful practical details given of considerable interest.

As regards the question, whether there are any special conditions of the system contra-indicating its use, they can only say that they have administered, it in various stages of pregnancy, in suckling women, in persons subject to asthma, epilepsy, and the like, without any deleterious effects. They, however, advise caution, especially in those affected by disease of the heart, vessels, or lungs. They conclude by drawing the attention of the profession to the success attending the anæsthetic in America by Dr. Colton, and in France by Dr. Evans ; and observe that they propose to prosecute further experiments on this subject, which they hope to lay before the profession at some future time. An appendix of some interesting cases is attached to the report.—*Amer. Jour. Dental Science.*

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#### NOTES FROM L'UNION MEDICALE.

DR. FORT in a surgical memorandum remarks that among the numerous cases of facial neuralgia is one which authors do not notice, but which frequently occurs. This cause, almost certain to be a source of error to practitioners, is a lesion of the buccal mucous membrane, behind the molars, and produced by the evolution of a wisdom tooth. The functional disturbances brought about by this slight lesion

are so intense as to lead sometimes to suspicion of more serious trouble.

M. Forget in a criticism of M. Fort's remarks, says that it is very true that the evolution of wisdom teeth produces peculiar disturbances ; and that the fact has already been pointed out by others. In a memoir published in 1828, on the various deviations of which the lower wisdom teeth are susceptible, Dr. Toirac, says M. Forget, reports six cases bearing on this point. In one of these cases the patient was subject to slight attacks of inflammation for a year after the left lower wisdom tooth began to appear. His cheek, not very much swollen, was extremely sensitive to the slightest pressure, while deglutition was almost impossible. The left tonsil was swollen, and the soft palate was very red. The posterior third of the crown of a wisdom tooth was found to be covered with a fleshy band, consisting of the gum, which was of a violet color, painful and slightly ulcerated.

A worse case was reported by Dr. Desirabode, in 1851. A man of 25 years committed suicide, and it was supposed on account of violent dental neuralgia. At the autopsy it was found that the left lower wisdom tooth was directed horizontally from before backwards, the roots being in apposition with the base of the ramus, and its crown applied to the posterior molar, upon which it exerted strong pressure. The gum was greatly swollen. No other lesions existed in the dental apparatus.

M. Forget cites a still more aggravated case. A man 26 years old had been for a long time affected with neuralgia referred to the alveoli of the molar teeth on the right side of the lower jaw. The entire ramus was tumefied, and to a considerable degree. Impeded articulation ; swelling of the whole *masseter* region, so to say ; hyperostosis of the coronoid process. M. Maisonneuve, having exposed the bony tumor, applied the trephine in search of the tooth. The result not being satisfactory, resection of the jaw was done, at the alveolus of the first molar, and the condyle was disarticulated. The bone having been divided by a section parallel to its axis, M. Forget found several purulent cavities which had burrowed into its substance. It was an instance of medullary osteitis of the ramus of the jaw extending to the interior of the condyle, which was hollowed out, by a little purulent cyst opening close to the articular cartilage. The severe symptoms and the structural lesions had for their point of departure the abnormal enlargement of the wisdom tooth, which was shut up in

the base of the coronoid process, and rising scarcely to the height of a millimetre above the level of the alveolus which it had hollowed out for itself. The tooth was of twice the normal size, the crown of it abutting against the neck of the adjoining tooth, in such a manner that in order to take rank in the dental arch, it would have been under the necessity of displacing from below upwards the molar which opposed its upward growth. It was this obstacle which compelled it to develope in the interior of the bone.

We draw off the above cases under the impression that it might possibly help the general practitioner, now and then, out of an obscure diagnosis, to be apprised of them. *Boston Medical Surgical Journal.*

#### VACCINE VIRUS FROM KINE.

So constantly is the vaccinator met with the challenge, honestly, and earnestly, put by anxious mothers, "Is your matter good !" that it cannot be denied that there exists a strong and almost innate popular idea of a possible impurity in vaccine virus, as commonly used. In other words, people seem firmly convinced that vaccination may communicate other diseases than its own, and that it is a matter of the highest moment to procure virus which is free from suspicion of even a possible taint.

The medical profession have not shared in this impression, except so far as to be very careful not to employ virus from so called "humory children," or those liable to it from hereditary taint. No honest physician uses such virus, from conscientious scruples. The advances in medical knowledge, however, are rendering this subject less and less an open question, as time rolls on. It is now proved that syphilis may be communicated by vaccination. In the London *Lancet* for 1862, an account is given of a town in Italy which was syphilized in this manner. One case was once reported to the Boston Society for Medical improvement. It is, however, stated that the syphilis is communicated only when *bloody* lymph is used ; so that if simply lymph, pure and free from admixture is employed, this loathsome disease cannot be imparted. However, when it is admitted that one other disease besides vaccinia has been imparted by vaccination, the question arises, Why may not pityriasis, psoriasis, and other skin diseases be imparted in the same way ? From considerations like these,

measures have been taken in foreign lands to procure vaccine virus direct from the heifer, and thus have a virus which is as pure as possible. They propose to renounce the vaccination from arm to arm.

Some idea of the importance of this subject may be derived from the fact that the Russian Government has ordered Dr. Bulmerink to organize, at St. Petersburg, a service to produce animal virus. In Naples, this practice dates back to the year 1810, by Dr. Galliati. In 1858 M. Negri revived the procedure, and is deemed the great authority at the present time. From thence, the practice has spread to Paris where Dr. Lanoix was very active in its introduction. (*See Etude sur La Vaccinateur Animale*, Paris 1866. New York Ballier Bros.)

It is thus seen that the medical profession have endeavored to supply their clients with virus of the most unexceptional character, and, by their use of it in their own families, have given countenance to the idea that vaccine virus is preferable.

There is also an impression that vaccine virus deteriorates by long use, by many removes from the cow. This is not sustained by facts. The protective influence is not found to be destroyed. In fine, the great advantage of vaccine virus from kine must lie in its being entirely free from syphilitic taints, and probably of all other infections which are believed by some to be communicated in connection with vaccination.—*Boston Journal of Chemistry*.

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## LAWS TO REGULATE THE PRACTICE OF DENTISTRY.

It is a matter of much gratification to know that the profession in some of the neighboring States is moving in right good earnest, for obtaining laws to regulate the practice of Dentistry. Pennsylvania is moving in the right direction and with much energy. A State Society has there been formed, and its first work is to be devoted to this special object. This is the right method of taking hold of the matter. The interest of the profession should be as fully secured as possible. Indiana is also moving in the matter. The profession there has its State Society, through which it is operating for legal recognition. Michigan is also making a strong effort this winter, and we trust other States will soon take the matter in hand and do what may be

done in this direction. Legislation to regulate the profession in this country is a new feature, the propriety of which has been called in question by many. It has been often objected that it is in opposition to the genius of our free institutions. A more mistaken idea, however, could hardly be entertained. The object of such laws, as it should be in all legislation, is simply the restraining and abatement of that which is injurious and wrong, and the encouragement and fostering of that which is right and productive of good. It is preposterous to assume that any one has the right and should have the liberty to do that, for the faithful performance of which he is incompetent, and emphatically is this so, when the health and welfare of a fellow being is involved.

The law in Ohio has been in existence about nine months, and though only partially operative, and the time is yet too short to make any kind of a test of its efficiency, yet enough is already manifestly apparent, to indicate that it will be eminently efficient for good, though the law is, to a large extent, inoperative for four years to come. A number of cases could be referred to in which incompetent quackish pretenders, have abandoned their business altogether, or gone to other States, where they could legitimately prey upon their unsuspecting victims.

We hope the profession in our neighboring States will keep these gentry moving till they are in the "last ditch." T.—*Dental Register*.

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#### EXAMINATIONS IN OHIO.

On the 1st and 2d of December, the State Board of Dental Examiners held a session at Columbus, for the examination of those who might present themselves, that their qualifications to properly practice in the Dental profession might be testified to by that Board. A work of this kind is no easy matter—to bring out in clear view the measure of the professional attainments of those with whom the committee would necessarily be but slightly acquainted. The examination of the office or college student is a very easy affair, compared with the work of this committee. The preceptor, if he is faithful, knows the weak and the strong points of his pupil, and the pupil knows something, perhaps much, of the method of procedure of his preceptor.

In the examinations of practitioners of experience, it is not proper

or just to enter into minute details, but to ascertain to what extent general principles are possessed, upon which correct practice must be based.

WHEN TO EXTRACT TEETH.—DR. I. Williams thinks there are, perhaps, but three cases in which he cheerfully and willingly extracted teeth. One was in extreme old age, where the processes are absorbed away and the teeth have become loose, causing irritation. Another was in the case of temporary teeth, where the permanent ones are making their appearance, and the third in cases where the teeth are very much crowded, and it is absolutely necessary to take out one on each side to give them room.

He would not be understood that he would not extract teeth in other cases. In such cases as had been referred to, where, perhaps, all the teeth in the mouth are decayed, and where the patient is absolutely too poor to give the time and attention to them, he might, in some such cases, with reluctance extract them, but with him, cases with such indications were very few. He was pleased with a remark he had seen in the REGISTER some time ago, with regard to saving even the roots of teeth. He had thought upon it much since that, and from what he had seen he was satisfied that even the roots of the teeth should be much valued. He had seen a root filled with gold twenty-five years ago, and it was still performing the part of a tooth well, even though it was but a root, and the processes had become firm and the root used as a tooth, had become to look like a tooth. He was in favor of saving the roots and all the teeth that could be saved.—*Dental Register*.

UNIVERSITY OF MICHIGAN.—The storm of professional wrath has been too much for the Regents of the Michigan University. The Supreme Court of that State has decided that the attempt to establish the homeopathic department at some other place than Ann Arbor, does not fill the intention of the Legislative enactment, whereby the University was to receive pecuniary aid, on condition of establishing this Chair. The Regents have, therefore finally receded from their action in the matter, and decline to accept the benefaction upon the conditions provided. It remains to be seen how far this agitation will affect the reputation and classes of the medical department.—*Cincinnati Lancet and Observer*.

DENTAL PUNS.—To what town in Poland should you go to have a tooth extracted? Ans.—Pultusk. When do your teeth usurp the functions of the tongue? Ans. When they are chattering.

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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TREATMENT OF ALVEOLAR ABSCESS.

In my remarks on the treatment of this disease, I propose to confine myself to those cases which arise from the destruction of the nerve, either from exposure from decay, or from the use of devitalizing preparations. The first thing to be done is to discharge the abscess. If no opening has been formed through the alveolus and gums, I clean out the pulp chamber and open the nerve canal, and then pass a small broach up or down, through the apical foramen, (this can be done much more easily after suppuration has taken place than while a devitalised nerve remains in the canal) and allow the pus to escape through the tooth. When all the pus has escaped, that will pass out of itself, I inject tepid water into the canal so as to clear it as thoroughly as possible from all putrifying matter, and close the cavity of decay with cotton dipped in sandarach, and allow it to remain in that condition for a day or two, when I cleanse it again with tepid water, and inject a weak solution of nitrate of silver into it. I use the nitrate of silver for the purpose of *stimulating* the inner surfaces of the abscess to a healthy action; I then close the cavity again for another day or two with cotton and sandarach, and almost invariably find that nature has cured the disease when I next examine the case. If not, I use a dressing of kreosote or carbolic acid and tincture of Iodine for a few days longer. When there is an opening through the gums I open the nerve canal as before, but I also cut down through the gums and alveolus to the apex of the root

of the tooth, and discharge the pus from the abscess through the gums. I then endeavor to pass the solution of nitrate of silver through the tooth and out through the external opening which I have made. After filling the nerve canal with cotton to stop any fetid matter from passing into it, I pass a tent of cotton into the external opening so as to prevent its closing, and stopping the discharge from passing out through it. One, two or more dressings may be required, according to the health and vitality of the patient, but I always feel *certain of success* if I have been able to adapt the treatment perfectly, in the manner indicated.

As soon as the tooth appears to be in a healthy condition, that is, when I find that it is firm in its socket, and no pain is produced on tapping it smartly, I, at once proceed to fill the root or roots, and the cavity of decay with gold. I do not think it is necessary to wait for the external opening to heal, as there is very little fear that any trouble will arise, after the nerve canal has been so perfectly closed that nothing can pass into it through the opening at the end of the root.

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#### EXTRACTS FROM AN ESSAY

*Read before the Union Dental Association of Ontario, at Toronto, January, 1869.*

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BY T. J. JONES, BOWMANVILLE.

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MR. PRESIDENT,—Having been invited by the Committee appointed to arrange subjects for discussion—to prepare an Essay to be read at this Meeting—I have hastily thrown together a few remarks on Artificial teeth. There is no branch of Dentistry requiring more skill or talent than is necessary to constitute a good Mechanical Dentist. I do not refer to the mere preparation of the different materials employed for bases, or the working, fitting up and polishing of them, but to that *Art* which readily adapts the best means, through a close appreciation of that peculiar want which every case for inserting possesses, as a personal characteristic, which is seldom, if ever, found to apply, in all respects, to any other case, and consists in the perception of the particular size, shape and shade of teeth required to give a correct expression to the countenance, with the experience, patience, and skill required in selecting such materials as will fill the many wants demanded. \* \* \* \* \* A set of teeth may be of the proper form size and color, answering every purpose of an artificial substitute for mastication and enunciation, and yet

not possess a *life-like* appearance, without which it is comparatively valueless. A great deal of tact and taste is required on the part of the Dentist, to combine elegance, beauty, and a correct *expression* of the features, with the exigencies of actual service. It is in the *combination* of these—appearance and service—that most of us fail. We find in nature the most perfect and beautiful conformation, without that mechanical regularity and precision which characterise most sets of artificial teeth, and which renders the detection of them as such, unavoidable, however serviceable they may be. This is caused more by the appearance of *each particular tooth* in relation to the whole number of teeth, than to the exactness of the entire piece, in the same manner that harmony of all the features gives character to the countenance. In nature no one tooth can be made to take the place of another without marring the whole denture, as well as the whole face. Not only in form and size, but in color and shading, we find nature sustaining this relationship by an almost imperceptible variation in each class of teeth, according to the complexion and anatomical symmetry of the face. \* \*

I grant that it requires a nice judgment on the part of the Dentist in selecting teeth for the various cases with which he meets, to detect these variations with accuracy; particularly, as there is an almost endless variety of shades and tints in the different classes of human teeth. Unfortunately, the manufacturers of artificial teeth have not as yet been able to supply us with such a variety as we require, so that we are very often compelled to use those which are not well adapted to the case which we have in hand. I admit that very great improvement has been made in the manufacture of teeth since rubber first came into use, but there is still room for improvement. In form, most of the *sections* of gum teeth are far from perfect; single gum teeth are much further from perfection than the sections. \*

\* \* \* \* \* It is to be hoped that as chemical combinations become more thoroughly understood, we shall be able to obtain teeth, modelled so exactly after the natural organs in form, size and shading, that we shall be able to construct sets of teeth for our patients so perfect in appearance that they cannot be detected.

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## THE DIGNITY OF THE PROFESSION.

BY W. G. BEERS, MONTREAL.

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Continuing this subject from the February number, we purpose briefly

reviewing a few other customs derogatory to a high professional standard, and injurious to the dentist to some extent, in a social respect. They who love the profession should honor its good name, and instead of settling to the level of the worst, should aim to elevate themselves to the dignity of the best. Every profession has its period of transition, when it emerges from a lower to a higher degree, demanding new and superior views and practices, and the removal of the rust of ignorance or isolation. Taking the results of dental organization, legislation, and journalism, in the Provinces of Ontario and Quebec, the present marks the era of transition. In reviewing customs of to-day which we think clog advancement, and hamper professional aspiration, we therefore, do not impugn the right of any one to advertise, or to practice customs as he may please, but we venture to suggest that the time has come when many of these customs should be discarded, which were perhaps, excusable in the past.

Would it not be advisable to abjure the use of "dental cuts" in newspaper advertisements, which to our mind, are as undignified as a skull and cross bones would be over the advertisement of a physician. Supposing that some eye and ear doctors use eye and ear "cuts," that is no argument why dentists should follow suit. The Canada Medical Journal lately censured the custom of oculists thus advertising, and an oculist or a dentist who resorted to such a fashion in England would lose caste forever. Of all dental cuts, that of the circle of dental instruments &c., is the most vulgar, and in its bad design, recalls one's impressions of the "operating" instruments of the Inquisition.

Show cases are, of all catch-penny tricks of business, the lowest, and deserving of the general condemnation they received at one of the first meetings of the Dental Association of Ontario. The public feeling is opposed to them, and they only serve to entrap the ignorant.

Let every Dental Association frown them down, and compel their members to discard them.

A man may wear for ornament what best suits his taste, but we certainly cannot see where the ornament comes in, in a molar filled with gold, suspended at the watch chain, or a polished cuspid, ever so beautifully set with gold, doing service as a breast pin. This by the way.

Cheap work and running down prices may come under the head of ethics, but is a subject deserving of ventilation at any time. People must form very low opinions of our professional labor if at one office

they are offered fillings from fifty cents to a dollar, and at another from two dollars upwards ; or artificial sets on vulcanite in one office for ten dollars an upper set, and in another for forty or fifty. This too, by the way.

We need a code of ethics, and a better understanding among ourselves as dentists. We know instances of unjust depreciation of a neighbors talents, unjust disparagement of a confrere's work, which, true enough, are not rare in the early history of any profession, but which go to show that we need a Code of Dental Ethics in Canada, as well as our brethren in the United States.

It must be apparent to the poorest established dentist, that to no one is the elevation of the profession of more concern than to those who have much to learn, and earn. If certain measures dignify the calling at which we labor, they dignify the members, and on the other hand, the respectability and high mindedness of the individual dentist reflects credit upon his calling. The surest and truest course to pursue to dignify the profession, is for each one, in his private and public character to dignify himself.

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#### A MISCELLANEOUS ESSAY.

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*Read by L. W. Bristol, of Lockport, before the gentlemen of the Western New York Dental Association.*

It has fallen to my lot to write an article upon miscellaneous subjects connected with Dental Surgery.

You have given me a "Roving Commission" covering a great deal of ground, a subject somewhat difficult to handle ; there seems no place at which to commence, and then again, there are so many places to begin.

[At this point the Doctor struck some hard blows at those who have obtained patents for inventions pertaining to Dentistry ; arguing that every Dentist should make all inventions and improvements pertaining to the Profession, public property, instead of "hiding them under the bushel" of a patent ; so much of it, however, was so mixed up with matters purely local, that we omit most of it.]—Ed.

They patented Collodion and attempted to set teeth upon that, calling it by the beautiful name of Rose Pearl, although it would have smelled as sweet by any other name. Some dentists bought the right to use that, but it proved to be too "Flexible."

They patented chairs that turned every way, like the flaming sword

at the gate of the garden of Eden, when in fact it was not practical to use only two or three of the movements. They patented spring plates, the manner of using which was as old as the practice of dentistry. All one had to do was to forward on the money and take his license. They patented Aluminum Star Solder, eight parts aluminum and one tin.

It would not be surprising to receive a notice of a patent granted on the application of forceps, or the manner of holding them. Should such a demand be made, rather than contest, I should be inclined to settle and save annoyance and expense, in fact I expect to see a patent on the use of the bur, an instrument as old as the profession, since one of the close communion dentists of the present day,—and thank God they are few,—said he had invented a new “Tool” for cleaning out cavities, and as a great favor showed, and explained to me how he made nothing but the old ancient discarded bur; and when I said to him, why Doctor that form of an instrument is as old as the hills, said he never knew that: he had actually sent on to the patent office and filed papers for an instrument, nothing more or less than the old jewellers pin tongs, worked with a nut on the end of the handle.

When I asked him why he did not attend our meetings and see all the improvements of the times, he replied “I never mix up with other dentists.” A severe loss to the profession.

If there could be a patent obtained, and I see no impediment under the existing easy manner of obtaining patents in the United States, by which we could take the parents, and put them through a course of purification and regeneration, and compel them to observe strict conformity to all the natural laws, previous to begetting offspring, and a strict observance after, with just the right kind of food, exercise, temper, bone, muscle and blood making material, much might be done to mitigate the suffering of the coming and rising generation. That man would be a public benefactor, and I do not think there would be found any one mean enough to claim priority of invention.

EXOSTOSIS.—I present a few specimens for your examination that have fallen into my hands during my practice; each one has its private history that I have not time now, nor you to spend with. I only present them and refer to the subject to show the importance of a careful, thorough examination of cases we are called upon to relieve. It will not always do to dismiss a patient suffering from pain about the jaws or teeth, with the assurance that their teeth are perfectly sound, and that their trouble is only neuralgia, or the effects of a cold, as you can-

not always detect *exostosis* previous to extraction. The specimens presented, you will observe are sound teeth as a general thing ; there was no redness or swelling of the gums nor peculiar fullness, nothing to indicate the true cause of suffering ; percussion did not cause pain, but they described it as a "dull constant hard pain ;" the usual remedies were all resorted to ; blistering with Kreosote, as was so highly recommended by a member of this association one year since, not only in the mouth, but behind the ears, and medicating generally without avail, but extraction proved the cure. The bicuspid root was a very difficult thing to get out, the crown had been broken before the case came into my hands. The tooth with the binding wire around it was taken from a skull found at an Indian mound in the town of Cambria, the teeth were all sound, the number complete. I used to examine that skull with a great deal of interest, especially the teeth, for from my acquaintance with the Tuscaróra and Onondaga tribes of Indians, I found their teeth very poor ; good, sound, beautiful teeth the exception. One day in examining it I saw a little enlargement of the process on the left second bicuspid, I cut it out and that is the tooth. None of the other teeth were effected in the least.

Why nature sets to work to manufacture a new deposit of bone on the fang of a particular tooth and not on them all is one of those miscellaneous, unaccountable cases that cannot be accounted for, unless we reply as did a peasant on the island of Corsica "it is a caprice of the eternal father." The treatment or prevention of exostosis of the teeth admits of no argument, no carbolic acid, no arsenical application, no drilling into or extracting the nerve, but simple, straightforward, good, honest extraction. Have a care gentlemen in extracting teeth with exostosis, they do not tumble out very easy.

OSSIFICATION OF THE NERVE PULP.—I have met with three cases of that description in the course of my practice, I regret that I have laid two of them away so nicely that I could not put my hand on them for this occasion, one I think I gave to Dr. Ford, and he placed it in the cabinet of the Dental College at Syracuse.

PHOSPHATE OF LIME.—A great deal has been said at our meetings upon this subject ; some, being disposed to treat it lightly and jokingly, apply the epithet of Dr. Phosphate ; that is all right, have your jokes and laugh ; I know of no subject discussed by the profession more interesting to me. I would not compel every one to feed upon lime, but when the indications are that it is needed, it is indispensable. If I were asked to state what the indications were where phosphate is

needed, I should say, the article enters largely into the manufacture of teeth and bones. You find a female small of stature, with thin pale skin, small bones, teeth white and chalky, and you will find that she has always fed on finely bolted-flour-fruit-cake, and has never partaken of food containing the bone making element; that woman needs the phosphate, and if she is ever to bring into the world offspring, must have it or the child will suffer the consequences.

See a child, the offspring if you please, of such a mother as I have described, large head, clear, waxy, clammy skin, pale, thin lips and gums, small bones, small chalky teeth, call in Dr. Phosphate, with his bone, muscle, and blood making material. Here we have the opportunity to prescribe materials that shall help to make a good set of natural teeth. Some will say the dentists only manufacture false teeth, very true, you may furnish a skilful workman with the materials, and direct him to make an artificial set of teeth; that has seemed to be all the profession has sought to accomplish in the old foggy days of "whipping the cat" "tooth carpentering," but thank God, those days are past. There are in the dental profession to-day as scientific, intelligent high minded men as in any other of the professions. The scientific dentist can also direct and prescribe the materials and assist nature in producing in her great chemical laboratory a natural set of teeth,

On the other hand we find in many cases an excess of lime, the system full of it producing calculi, tartar around the teeth etc; in some cases astonishing!! I present a few specimens. No. 1 was, what was called, by a medical man, who thought what he did not know was not worth knowing, *a bone cancer*, and he doctored it accordingly for about one year, and it continued to grow all the time. At last the lady called on me, and I rolled the thing out and "the big bone cancer" was cured, and the doctor was so indignant because I had pronounced it nothing but an accumulation of tartar adhering to an old root, that he would not forgive me, or be on friendly terms until the day of his death. He said I should have called it a bone cancer and burned it and charged her fifty dollars for the operation, that I was not a scientific man, nothing but a tooth carpenter and I did not dispute with him.

The specimen in the paper box is calculi formed in the bladder of a gentleman of our city; he suffered exceedingly for the space of two months, while it was passing through the urethra. His medical attendants, three in number, pronounced the difficulty to be neuralgia, and treated him accordingly. Mr. W., being an intimate friend of mine, and having had charge of his teeth for twenty years, where I always

found an excess of tartar, and his system full of lime, I insisted upon it that his real difficulty was gravel or calculi, and advised the free use of mucilages; his medical advisers consented, as it would not interfere with their treatment. In about two weeks from the commencement of the free use of mucilages, at about five in the morning, after a night of intense suffering, that specimen passed, and his son came running to me in a very excited manner, completely overjoyed, bringing that little *porcupine*, saying you have beat all the doctors; and there was as great rejoicing in that family as there would have been over the birth of twins, with fully as much suffering experienced; the spasms at times having been terrible.

I also present some specimens of lime and other ingredients held in solution, from different locations and deposited in the Stilwell heaters in an incredibly short space of time. These heaters are calculated to render more pure the water where there is a great amount of foreign matter; some are the accumulation of one week, some two weeks, some nine days; the labels will show the time.

PLASTER OF PARIS.—I have come to the conclusion that there is as much difference in the quality of plaster, at least for dental purposes, as any other article indispensable to the dentist. The fine "*dental plaster*" advertised by many, I regard as worthless, especially in Rubber work. I have found coarse ground, well calcined plaster the most desirable, less likely to give in pressing together the flasks, and setting more quickly.

I find great advantage gained in damp weather by taking, say a quart pail of the plaster and setting it on the stove, until all the moisture is dried out; when cool, it will set much sooner as any one may see by trying the experiment. Plaster that has been stored for any considerable time in cellars or damp store rooms, is not fit for use until reheated. The grade of plaster I refer to is known to the dealers as "*casting plaster*."

GENTLEMEN:—Allow me in closing this "Roving, rambling, miscellaneous paper" to suggest, and I think the suggestion was made very early in the organization of this society, that each member, not only prepare an essay, but present some peculiar specimen, connected with the profession. We all meet to learn something, all in pursuit of knowledge, we get a better idea by examining a specimen, of the manner of doing a thing, than we can by a written or oral description. Be the subject ever so small in our own estimation or of others, it is a big thing to somebody; if it does nothing more it suggests an idea,

that may be enlarged and improved upon until a very desirable improvement is developed, that may benefit the entire profession. "Tall oaks from little acorns grow" is an old and true saying.

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## OFFICE MANAGEMENT, AND THE DEPARTMENT AND HABITS OF THE DENTIST.

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BY. R. TROTTER, GUELPH, ONTARIO

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The dentist, although he may be perfect, as a gentleman and operator, is often considered as a horror to the community; even foolish mothers frequently restrain their children in their naughtiness by threatening to take them to the dentist; nearly everything that the public have to do with him professionally is classed among the troubles and trials of life. This being the case it is highly essential, for the success of the practitioner and the comfort of his patrons, that his office and everything pertaining to it, should not only be divested of all that is unnecessarily disagreeable but should be made as pleasant and attractive as possible, even to the most fastidious. To this end the office should be fitted up in as neat, attractive, and cheerful a style as possible. Many dental patrons are persons of refinement and good taste, and they, as well as those who are not so, are very much encouraged and fortified on entering the office to find everything neat, clean, in good taste, and inoffensive. Gentlemanly deportment in and out of the office, and tidy and correct personal habits are essential requisites of the dentist. If any man has an excuse for bordering on foppishness it is he. His calling permits him to dress neatly and be always clean, and the comfort and confidence of his patients demand it. The habits of smoking and chewing tobacco, snuffing, drinking strong drinks, ought to be eschewed, if not totally, until after office hours. His hands should always be washed before commencing to operate, and burs, excavators, and files should, as a general thing be cleansed with a brush and water in the presence of the patient. This is something that I think is generally overlooked by the profession, but not by patrons, as I have frequently heard patients speak with disgust of instruments being used in their mouths without cleansing, which had but a short time before been used for others.

The dentist ought to consider a bad breath as tantamount to a disability to practice, and when it exists ought to use immediate and effectual means to remove it.

Many other hints under this caption might be given, but the writer

is satisfied that the good sense and intelligence of the profession will prevent their losing sight of the little, but not unimportant details of their calling.

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## PROCEEDINGS OF SOCIETIES.

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### DENTAL ASSOCIATION OF THE PROVINCE OF QUEBEC.

MONTREAL, APRIL 20th, 1869.

#### BOARD OF EXAMINERS.

The first meeting of the Board of Examiners, in compliance with the Act of Incorporation, which we publish in the present issue of the Journal, was held at the office of Dr. Bernard, Montreal, to-day.

The following members were present, A. Bernard, C. F. F. Trestler, J. H. Webster, J. A. Bazin, W. G. Beers, of Montreal; P. Baillargeon and J. McKee, of Quebec. Dr. Bernard was appointed chairman, and W. G. Beers, Secretary, pro tem.

Dr. Bernard read the Act of Incorporation, after which the election of officers took place, and resulted as follows, the Quebec members preferring that all the offices should be in Montreal for the present. President, A. Bernard, Montreal; Secretary, W. G. Beers, Montreal; Treasurer, J. A. Bazin, Montreal; Registrar, C. F. F. Trestler, Montreal.

The rules and regulations of the Royal College of Dental Surgeons of Ontario were read, and alterations suggested, adapted to the circumstances of the Province of Quebec; and a committee of three appointed to finally revise them, and report next day, after which the meeting adjourned.

April 21st, 1869.

The adjourned meeting of the Board was held this afternoon at Dr. Bernard's office. Present, A. Bernard, C. F. F. Trestler, J. H. Webster, C. Brewster, J. A. Bazin, W. G. Beers, of Montreal; P. Baillargeon and J. McKee, of Quebec.

The report of the committee on rules, regulations, &c., was submitted and adopted with several amendments. The fee to be paid for certificates was made \$50.00; \$40.00 to be refunded rejected applicants.

The following were appointed Examiners. A. Bernard, Institutes of Dentistry; P. Baillargeon, Dental Physiology; C. F. F. Trestler,

Dental Anatomy; J. H. Webster, Mechanical Dentistry; C. Brewster Dental Chemistry; J. A. Bazin, Filling Teeth; W. G. Beers, Dental Pathology; E. Lefaivre, Anæsthetics; H. Ross, Irregularities, and Anomalies; J. McKee, Dental Surgery; M. Pourtier, Dental Hygiene.

Works recommended. Tomes Dental Surgery, Harris' Principles and Practice, Taft's Operative Dentistry, Richardson's Mechanical Dentistry, Piggott's Dental Chemistry, Handy, and Gray's Anatomy, Carpenter's Physiology, Bond's Dental Medicine.

The officers elect were appointed a committee with full power to obtain a proper Seal, Certificate, blank forms etc. The President and Secretary were authorized to grant certificates of License to applicants entitled to them without examination. A vote of thanks was unanimously passed to Mr. Carter, M. P. P., for his active support of the Act, and the assistance he had given the profession; also to Mr. O'Donnell, of Peterboro, Secretary of the Royal College of Dental Surgeons of Ontario, for furnishing forms of certificate, application, rules and regulations of the Ontario Board, &c. The meeting then adjourned to meet on the third Tuesday in September next, at 9 o'clock, a. m., to examine students, and do such other business as may come before it.

W. G. B.

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#### ODONTOGRAPHIC SOCIETY OF PENNSYLVANIA.

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The regular monthly meeting was held on Wednesday, March 3d, 1869, at the Philadelphia Dental College building, No. 108 N. 10th St. The President in the chair.

The subject of "The Relative Merits of Clasps and Atmospheric Pressure for retaining Partial Plates" was taken up.

Dr. Moffit, who first spoke, said that he would be guided by the positions of the teeth, of the two maxillæ, when occluded. If the lower protrude and artificial teeth are mounted on suction plate, the leverage may be too great, and thus interfere with the use of the case for mastication.

Sometimes it is impossible to obtain accurate impressions; the natural teeth being formed much larger at the crowns than around the neck, they will draw the material used for taking impressions, or cause it to be broken so as to prevent a perfect model of the mouth being made; then we may be compelled to use clasps.

He had found a brace to be of service, where there was a tendency in the plate to tilt or drop at the back ; this he arranged so as to come in contact with the posterior surface of the natural molars, and thus counteract on the force applied to the plate by the biting.

In fifteen years' practice, he had not known of one, two, or three incisors mounted on suction plate that would perfectly answer the purpose of mastication ; he thought but few cases could be successful except where a bicuspid or molar was attached to the plate.

Dr. Harris' whole experience has been against the adjustment of plates by means of bands around the remaining teeth ; whether wide or narrow, the same results are produced. A degree of irritation is set up, softening, loss of tooth structure, and eventually of the teeth, supervene. Happily, as the profession advanced, the atmospheric pressure came to its aid. This gentleman had for years supported single teeth upon suction plates, and he thought that, if even retained by silk ligatures, the same consequences as from the use of the metal clasps would result, from the accumulation of food. its consequent decomposition, and general interference with the healthy functions of the teeth.

He had seen the teeth worn by Washington, a set of both upper and under, each adjusted by simply a half-round wire with spiral springs. From the time these were constructed to the present, a gradual increase in the width of plates has been made. until now the whole roof of the mouth is covered, adding much to the comfort of the individual and the usefulness of the denture.

Another point to which he wished to call attention was, that as the absorption of bone progressed, the plate receded, and the lateral pressure of the bands very frequently raised the natural teeth from their sockets, thus first impairing their use, and finally causing their entire loss.

Although there is at times much more inconvenience occasioned, at first, by the introduction of atmospheric plates, than by those attached with clasps, the recollection that "patience and perseverance overcome all obstacles," may encourage the wearer to persist and thus surmount the difficulty of retaining the former. He narrated a case where the death of a husband had caused the wife to forget the minor trouble occasioned by a plate, and before she was aware of it the artificial teeth had become a great comfort. Sometimes the dentist is subject to sad disappointments. He remembered one of his own that seemed worth giving. A lady, who had worn a narrow plate for several

years, had suffered so much of a change in her mouth, from the absorption of the alveolar processes, that the plate would never have been supposed, from its appearance, to have been made for her; one end actually riding across the alveolar ridge, caused the cheek to protrude as if wearing a plumper on that side. He very naturally concluded, that if such an inconvenient piece had been put up with, anything approximating to a correctly made denture might readily be worn. To his surprise, upon having neatly adjusted a properly constructed set, the first exclamation made was, "Don't you see I can't wear these teeth!"

The doctor thought that sometimes irritation of the soft parts is occasioned by the continual exhaustion of the air from the cavity of the plate; but this is more easily cured, than we can replace the loss of structure or loosening of the teeth when bands have to be kept upon them. This was not presented as a theory, but as facts observed during an experience of thirty-five years as a practitioner.

In conclusion, he expressed his views to be, that to obtain correct adjustments of plates to the mouth is a very delicate operation, and and probably the most annoying of all the duties of the dentist are met with in the mechanical work; he hoped the two branches, this and operative, would soon be separated, as it certainly would be a great relief to many.

Dr. Nones deemed it always advisable to use the atmospheric pressure; sometimes the plates may not be readily retained without clasps, particularly when being used in the process of mastication. The peculiarities of each case were so numerous that he always considered them, and generally allowed this to govern his actions.

Dr. Long noticed a remark made by a writer in last month's DENTAL COSMOS, that "no intelligent dentist would insert teeth in any other way than on a suction plate;" did not approve of such sweeping assertions; knew quite a number of very intelligent dentists who used clasps to secure the plate, when the case seemed to require it; had often seen the decay of teeth caused by badly-fitting clasps and by want of cleanliness, the patient allowing food to remain under them; thought the best plan to make a neatly-fitting clasp was to press a piece of well-annealed platina around the model of the tooth, and melt upon it scraps of gold.

There were some objections to the air chambers in plates, from their tendency to work forward, as any one knows who has made a number of sets for the same patient; the edge of the chamber will

be in danger of impinging upon the anterior palatal canal, causing severe pain by pressure upon the nerves. To avoid this, it is best to place the cavity as far back as possible. He preferred plates without chamber, depending upon accuracy of fit to hold them in position, but seldom found patients willing to dispense with the extra anchor for their "false substitutes." Although advocating that method for the insertion of artificial teeth, he rarely practices it; finding, as Shakespeare makes Portia say, that he "can easier teach twenty what were good to be done, than to be one of the twenty to follow mine own teaching."

Dr. Howard thought that, by giving a decisive preference for either of the methods, he should place himself in a fort from which he had no retreat; and, to make the best of it, would most likely be compelled to succumb to the powers which had a free range. He had met with cases that struck him with astonishment, not being able to account for their adhesion; these were small plates, composed of either silver or gold, extending upon the roof of the mouth as far as the rugæ are found, and longitudinally or circumferentially from cuspid to cuspid, right and left; held originally with clasps, but now by nothing but the perfection of adaptation. This he thought settled the problem. To obtain satisfaction from the beginning cannot be invariably accomplished in partial cases, without the use of a stay clasp or springing of the plate with force about the palatine or labial necks of the teeth. Therefore he concluded by saying that both clasps and atmospheric pressure are good, yet neither should nor can be made obsolete.

Dr. Stellwagen had inserted single teeth upon suction plates, and found them to answer well for all purposes required, although subjected to rigid tests. He thought clasps should only be used after the atmospheric pressure was found to be inadequate to meet all the requirements. He often met parties able to wear plates from which the clasps had been broken, yet prior to that accident the patient had deemed them essential to comfort and success in wearing.

Prof. Smith thought the subject under consideration to be one of great practical importance, affecting as it does the appearance and comfort of a very considerable number of patients, while often taxing the skill and jeopardizing the reputation of the dentist. A matter of so much moment demands careful study, and requires that in forming conclusions, we be assisted by sound judgment and practical experience. Very opposite opinions have been expressed this evening

as to the efficiency and utility of the different modes of applying partial dentures—some claiming that in no case can an artificial piece be retained in the mouth by other means than atmospheric pressure, without positive injury to the natural teeth; others giving as the result of their trials that from one to three of the oral teeth inserted without the aid of clasps, cannot be retained in the mouth during the process of mastication. Speaking from his own observation, he could not acquiesce in the views presented by either side. He would go neither to the one extreme nor the other, but stand upon the middle ground; this he believed most emphatically a tenable position, sustained by facts and the teachings of every day practice. While in most cases his preference would be for suction plates, yet he unhesitatingly discarded the theory of necessitated and positive injury from every form of clasped denture.

English dentists, for more than half a century, have used partial plates clasped, almost exclusively; their testimony is not such as to lead to utter condemnation, but rather to a continuance of the usage. Much injury has unquestionably been done to the natural teeth by clasps, but he believed that in almost every instance it could be directly traced to the neglect or want of cleanliness on the part of the patient; to the injudicious selection of natural organs to which to apply them; to the improper form of the support, or the want of adaptation. If our American students were as thoroughly schooled in the manipulations pertaining to dental mechanism as the English are, he believed far less mischief would be observed from clasped plates. There is too great a tendency to confound as synonymous, in these days of the reign of cheap materials, the ability to adjust a set of section teeth on a base of rubber, and mechanical dentistry. It is here, in a want of knowledge of the principles of mechanical dentistry, that we find the source of evil from clasped plates; just in proportion as we understand these principles, and by nice manipulation are able to put them in practice, will we diminish the injury to the natural teeth from the use of bands. This style, when well adjusted, will need a clasp only to steady it; its *main* support being from accuracy of adaptation to the parts upon which it rests. Often, very often, plates are formed and clasps adjusted in such a manner as to compel them to do *all* the work of sustaining the piece. Where such is the case, detriment to the natural organs must be the result.

Classes of teeth entirely unsuited for such a purpose are not infrequently selected as supports for partial cases. He had often seen

clasps about the cuspid teeth, and in one or two instances about central incisors.

That a clasped plate necessitated the absorption of the processes about the natural teeth more than a suction plate would do, he believed to be without foundation in fact. In regard to a clasp about a natural tooth interfering with its normal condition, as a spring embracing muscular tissue interferes with its functions, he thought we had no evidence to justify us in concluding. The damage which is done to a tooth he conceived to be purely external, and when the plate is properly formed and the clasps nicely adjusted, there is little danger from this source. A marked want of attention to the cleanliness of the piece, assisting the mechanical action of the clasp, may be, and doubtless is, a prolific source of harm.

While he believed the clasping of partial cases, in the present condition of dental prosthesis, to be decidedly *good* practice, he nevertheless discarded the view that suction plates cannot be made to answer where the teeth had no antagonists. He felt no hesitation in inserting from one to six oral teeth on suction plates, when such a course seems most in harmony with the requirements of the case; had a number of such in his own practice, and had seen them from the hands of various gentlemen in the profession.

An objection urged against suction plates for partial cases, was the difficulty of obtaining a perfect impression in wax. He recommended plaster: where there is liability of displacing the wax in withdrawing from the mouth, it is the material to meet the demands; it does not draw but breaks, and in such a manner as to preclude the possibility of getting it into any position but the correct one when adjusting the broken pieces. The cup may be detached from the plaster in the mouth, then cut, if hot, so as to break in a manner to best facilitate removal. One of the most valuable properties of plaster as an impression material is its quality of resisting displacement, when set, without breaking. With plaster, as perfect an impression of the mouth can be obtained for a partial as for an entire case.

In regard to chambers, he was satisfied that the very best form of suction plates were those without them; as commonly made they are too deep. A shallow cavity is far more efficient than a deep one, as the part is only put upon the stretch, while the deep is soon filled, often with an indurated mass, which renders it worse than useless. Prof. Smith called attention to the spring plates patented by E. B. Goodall, of New Hampshire, and explained the manner of construct-

ing. Objection being raised to this method because of the patent, he confessed his inability to understand why a professional man, simply because he is such, should be debarred from protecting an invention by legally obtaining a patent, while the mechanic is applauded for such a course.

He considered mechanical dentistry, so called, by far the most perplexing department of dentistry, requiring for its intelligent practice an extended range of experience and information. He hailed with open arms any discovery or invention, patent or otherwise, that would assist in securing more certain and satisfactory results than have yet been reached in this branch.

Prof. McQuillen said that his experience with regard to mechanical dentistry had been so limited of late years that it might appear almost presumptuous for him to express an opinion on the subject, but he could not refrain from stating that he had known of several instances in which one or two teeth, attached to suction plates, had been worn with comfort and advantage for years by patients who had come under his care. He recalled in particular two sisters, one of whom lost a central, the other a central and a lateral incisor, which were replaced by artificial teeth, so perfectly adapted, and secured by atmospheric pressure, in each instance, that only a very critical eye could distinguish them from the natural organs. The adhesion of the plates to the roof of the mouth was such as to demand some force to dislodge them. While making this statement, he fully recognized that cases are frequently presented to the practitioner in which suction plates could not succeed (owing, however, more to mental than physical difficulties) and in which bands would be absolutely indispensable. The maladaptation of bands was calculated to abrade the teeth, cause decay, and loosen them, but when properly adjusted, for patients who are careful to use the tooth-brush, these injurious results do not supervene, even when such plates have been worn for many years.

Dr. Moffit had received a circular from the "Spring Plate Company," and he had examined some of the work; but did not see how it could be used without eventually spreading the arch of the teeth, in which case it could not be retained. The action of this style of plate would be the same as some of the appliances for treating irregularity where the arch is contracted. He thought there would be more mechanical than chemical action causing the abrasion of teeth where clasps are used, owing to the constant motion of the plate.

Dr. W. H. Trueman inquired what was claimed as original in the

patent spring plate,—the idea of retaining them in position by pressure upon the natural teeth in the manner described, or the application of rubber to that particular form of plate? If the former, it is no novelty. He had seen gold and silver plates made upon precisely the same principle, pressing upon from one to four teeth on each side, ten or twelve years ago. The idea was an old one then. He had seen rubber plates retained in the mouth by the same means. They answered very well for a short time, but the teeth would spread. Nearly, if not all, the spring plates he had made, sooner or later came back, either to be replaced by new, or to have bands extended around the teeth. Some few lasted three or four years. He could see no difference between them and the usual form of regulating plate made for the purpose of expanding the arch. To be retained in place, there must be pressure upon the teeth, and this pressure will move them—a fact admitted by the gentleman *claiming* to be the inventor. He tells us in a recent article upon the subject, that, “if the plate bears too hard upon one tooth, it will move out so as to equalize the pressure on all the teeth,” and then goes on to say something about widening the arch a little, treating it as a small matter. What is to stop this action from continuing as long as the pressure exists? It is true, it is not so rapid when acting on three or four as on one. These teeth being constantly held out of place, a deposit of bone around their fangs will render the deformity permanent, especially in young patients. He did not think the interlocking of the cusps during mastication could be depended upon to prevent this; at least it had not done so when they were formerly in use. He believed the adaptation of artificial teeth, especially partial sets, required the constant exercise of judgment; had, within the last week, met with a case on gold, nearly a full upper, which had given perfect satisfaction fifteen years, and to all appearances was likely to continue useful fifteen more, which was held up, or at least depended for support, upon a clasp of heavy half-round wire thrown around a wisdom tooth, and made to touch on only two opposite points; every time the patient closed the mouth, the plate was pressed up and oscillated upon these two points. In this case the motion was unavoidable; the dentist who made it showed his judgment in making provision for it. The only visible injury was a slight depression where the band pressed. He had no doubt if the band had been made to fit, as the books tell us they always should, *accurately*, and an effort had been made to prevent this motion, the tooth would have gone long ago.

As a general rule, he preferred to make clasped cases for *men*, and suction plates for *women*. The latter in most cases have a decided advantage, but men as a rule will not be bothered with them. They want something they can put in their mouths and use without any "getting used to." Ladies on the contrary (the side they are mostly on,) have more patience, more perseverance, and their tongues being so much more active and accommodating, it don't take them so long to feel at home with a plate in their way. He very often puts little stay bands on plates, so as to hold them until the patient becomes accustomed to and learns how to manage them; then he cuts them off. When the integuments are soft and flabby, the plates will sometimes cut up into them and produce serious irritation; half-round wire on the edge generally gives relief in such cases. He thought the injury to clasped teeth was more a chemical than a mechanical action. He had no faith in the idea suggested, to allow the saliva free access between the band and tooth; cleanliness on the part of the patient is the all-important preventive. The standard clasp had perhaps some little advantage, but could seldom be used. He had seen a perfect groove worn in a tooth by gilling twine used in regulating cases, undoubtedly by chemical action, as mechanical abrasion in this case was impossible. The extreme sensitiveness at the neck of the tooth, he thought due to the fact that at this spot the cementum and enamel, each brought to a thin edge, unite often without lapping over, leaving in many cases the dentine poorly protected. This can readily be seen with the naked eye—better with the microscope, by making a longitudinal section of a canine or incisor.—*Dental Cosmos*.

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## SELECTED ARTICLES.

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### DISEASES OF THE JAWS.

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BY THOMAS WATERMAN, M. D., BOSTON.

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I.—*Naso-pharyngeal Polypus. Extirpation preceded by Temporary Displacement of the Superior Maxilla.*—B. F. F., æt. 39. A polypus of the left nasal fossa has been steadily growing for four years. It is visible just within the anterior nares, can be felt behind the soft palate, and can be seen by raising the palate with a spatula. It is hard and firm to the touch, does not readily bleed, and is not accompanied by deafness. Its point of origin is plainly from the posterior

part of the nasal fossa. The left side of the nose is distended by the polypus, giving to the face the characteristic expression accompanying similar growths.

In view of the size and obviously fibrous character of the growth, as well as its inevitable tenderness, no other mode of removal than its direct excision at its point of origin seemed admissible, and this could be effected only by removing the upper jaw in a way and to an extent, sufficient to expose the whole nasal fossa.

*Operation.*—A vertical incision was made from the nostril through the upper lip, and the cheek dissected up freely from the bone. The maxillary bone was then sawed horizontally across just below the floor of the orbit, from its outer border to the nasal fossa; the intermaxillary suture was divided by bone forceps, the mucous membrane of the hard palate having been previously incised along the median line. A broad chisel inserted into the cut made by the saw depressed the bone, fracturing it posteriorly at its connection with the palate bones. By this displacement and without any further detachment the origin of the polypus could be easily reached; the growth, which consisted of many firm lobules, was cut and torn away from the sphenoidal bone into the cells of which it had penetrated. The point from which it grew was then thoroughly swabbed with Squibb's liquor ferri subsulphatis, care being taken not to bring it in contact with the cut surfaces of the displaced bone. No ligatures were required. The polypus being removed, the bone was replaced and held in position by a silver wire twisted around the incisors on either side of the median section, a cork wedge was placed between the posterior molars, and the lower jaw bandaged firmly against the upper.

On the ninth day after the operation the patient was out of doors, on the eleventh an attack of erysipelas confined him to his bed again for a fortnight, but with no detriment to the progressing union of the jaw, which was perfected sufficiently to permit the removal of the wire on Oct. 18th, five weeks from the date of operation (Sept. 14th.) On Oct. 28th, he was discharged from the Hospital by his own request. He had been able for ten days or a fortnight to chew meat with the teeth of the affected side, so firm was the union, and there was no deformity of the face, the trifling scar of the lip being invisible under his moustache. Two or three days before he left, a triangular piece of dead bone, about one inch long and one-third of an inch broad, came out through his nose. It appeared to be a portion of the palatal process of the superior maxilla.

Temporary resections, or osteoplastic resections, as they are termed in Europe, are characterized by the displacement of a bone still partially held in place by the soft parts ; and by replacement of the bone, which has been thus rendered moveable, as soon as the extirpation of the tumor is complete. The traces of the method by which the surgeon obtained access to the tumor are thus effaced.\*

The result of these procedures, as well as that of complete excision of the upper jaw, illustrates the extent to which operations may be successfully practised upon the bones of the face which protect and enclose important parts, but are independant of vital organs. The particular operation under consideration is undoubtedly a valuable resource in many cases hitherto requiring a still severer mutilation, but as shown in the case next reported, it does not admit of universal application. The improvements of modern dentistry are available for the diminution of much of the deformity entailed by the entire removal of the superior maxilla ; an artificial jaw of vulcanite not only restores the dental arch, but obviates the unsightly falling in of the cheek usually consequent upon this operation.

II.—*Pharyngeal Tumor. Extirpation preceded by Resection of Superior Maxilla.*—J. S. I., æt. 33. Fourteen months since a tumor of the size of a hen's egg, springing from the vicinity of the left tonsil, was removed by the ecraseur. It was thought at the time to be probably malignant, but his recovery from the operation was rapid, and on examining his throat no trace of its existence or point of implantation can now be seen. Within two months his ability to blow air through the left nostril has gradually ceased, at present it is entirely obstructed. The right nostril is also partly obstructed, and to an increasing extent. His deglutition as well as respiration is difficult. On introducing the finger behind the soft palate a growth having a broad surface of origin from the basilar process of the spheno-occipital bone fills the left half of the space between the base of the skull and the posterior nares. The finger can with difficulty be swept around the tumor on account of the small space unoccupied by it, but its attachment and the constriction of its base can readily be felt. No part of the tumor enters the nasal cavities, it cannot be seen from the anterior nares, nor is there any external or visible deformity. The tumor is symmetrical in shape, bleeds on touch as it also does spontaneously or from sneezing, is firm and hard,

\* Rapport sur les Progres de la chirurgie, Paris, 1867 ; In this work a history of the operation of temporary displacement of the upper jaw may be found, also in the Sydenham Year-Book of Medicine and Surgery, 1862, pp. 271 and 295.

though friable, and is not painful or sensitive. There is no enlargement of the lymphatic glands. It was not inspected with the aid of the Rhinoscope. As the disease was inaccessible for thorough and complete removal, without the excision of the left superior maxillary bone, neither the division of the soft palate (*Manne*) nor the partial removal of the hard palate (*Nelaton*) offering any chance of getting at the tumor, that operation was performed Oct. 12th, by the method usually described as of Velpeau. Through the aperture thus afforded the tumor was rendered visible as well as accessible, presenting a round convex mass an inch and a half in diameter furrowed by the septum of the nostrils. It was removed with the aid of curved scissors, the bone from which it grew was cut away with the gouge, although not apparently diseased, and the surface thus denuded, as well as the soft parts adjoining, were swabbed with Squibb's liquor ferri subsulphatis. Two or three ligatures only were required.

The tumor under the microscope proved to be glandular, rather than malignant. According to Dr. C. Ellis, "it was composed of rather small nuclei, with pale nucleoli somewhat larger than those usually found in glandular growths, but resembling them in other respects. A few doubtful lobules and some fragments of lobules were also seen. There were also found some fibrous tissue and a few minute blood-vessels. Very few, if any cells, and those of small size."

On the third day from the operation the stitches were removed from the incision in the cheek; on the ninth the patient sat up, and on the fourteenth he was discharged.

In February last he visited the Hospital, wearing an artificial jaw, which, exclusive of the palatine arch, was not more than one inch in diameter, so completely had the cavity left by the operation filled up. The scar on the cheek was invisible beneath his whiskers, there was no falling in of the cheek, dropping the lower eyelid, nor paralysis of the face. The tone of his voice was not noticeably nasal, and there had been no recurrence of the tumor.

III.—*Hypertrophg of Gums. Partial Resection of Superior Maxilla.*—M. A. S., a young woman of average mental capacity, æt. 27. She has never been in good health. Her mother and her nurse say that the disease of which she is the subject is not congenital, but ever since the patient herself can remember she has been asked "what is the matter with your gums?" She has repeatedly had abscesses about the mouth, gum-boils, catarrh, and suffered most of

her life from thick speech, deafness, difficult deglutition and dull pain in the jaws.

On examination the gums are seen to be hypertrophied along each side of the dental arches, not uniformly, but more prominently at some points than at others. The principal outgrowths are in front of the canine and incisor teeth in the upper jaw; in the lower jaw they occupy the place of the molar teeth on both sides. In the palatine arch of the superior maxillary bones two projecting excrescences, having their attachment anteriorly, pass backward, concealing the soft palate; in the cleft between them the uvula can be seen. On passing the finger into this cleft it can be swept around slightly, the soft palate and a small part of the hard palate not being connected with the growth. These excrescences feel quite hard and non-elastic. The portions which project backward are somewhat movable, and can be pressed up so as to touch the palate.

At various times several teeth have been extracted, and the patient thinks that this has caused the growth to shrink somewhat, but the changes have been slight during the last eight years.

On the 26th of June all the teeth of the upper jaw were extracted, and at the same time those portions of the excrescences of the upper jaw which concealed the soft palate were sliced off. The patient was discharged on the 3rd of July, and re-entered the Hospital Oct. 7th. The disease in the meantime had remained quiescent.

Oct. 9th, the whole of the outgrowths were removed with the gouge, and the dental border of the superior maxilla sawed off. The wounds healed rapidly, and on the 21st of Oct. the patient was discharged, with the cut surfaces granulating in a healthy manner.

The rarity of the disease has led me to report this case, the interest of which centres in the peculiarity and infrequency of such an hypertrophy, rather than in the result of the operation.

I find but three recorded cases of this disease, one by Professor Gross,\* one by Mr. Pollock,† and a third by Mr. Heath,‡ occurring under the care of Mr. Erichsen, in Univ. Coll. Hosp. In the first two cases the disease was congenital and returned to some extent after removal. A very remarkable specimen of this disease presented itself in the person of a female of feeble intellect, covered with a remarkable hairy growth, who was exhibited by a showman in this city some ten years ago under the name of "Bear Woman." The

\* Gross's System of Surgery, 2d edition, Vol. II., p. 534, fig. 330.

† Holmes's System of Surgery, Vol. IV., p. 18.

‡ Injuries and Diseases of the Jaws, London, 1868, p. 189.

hypertrophy of the gums was even more conspicuous than in the recorded cases. It is a little singular that Mr. Pollock's case was characterized by an extraordinary pilous development, and the patient a subject of epilepsy. Dr. Gross's patient was a stunted and feeble-minded boy.—*Boston Medical and Surgical Journal*.

[TO BE CONTINUED.]

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## EDITORIAL.

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### MEETING OF THE ASSOCIATION.

As most of our readers are aware, the next meeting of the Association is to be held in Belleville, on the fourth Tuesday (the 27th) of July.

Our old friend Dr. Relyea, writes to us, that he wishes the next to be the best meeting that we have ever held, and for that reason, asks us to call the attention of the members to the fact, that in order that the meeting may be so, it will be necessary, for all who intend to take part in the discussions, to be making the requisite preparations. Since writing the above, we have received a letter from Dr. Rowe, on the same subject. As there are many matters of importance to be brought before the Association, it is to be hoped that, every one will come to the meeting with his subject well *digested*, so as to take up as little time as possible. A code of ethics is sadly needed, and we hope that something of the kind will be brought before the meeting. It appears to us, that the matter of *fees* might, with great propriety be discussed at this next session; not that we expect that all dentists could, or would be willing to agree to one fixed scale of fees, but, we do think that a minimum might be fixed, which would be acceptable to every dentist in the country.

There are several other matters, to which our attention has been called, which we will notice in a future number. C. S. C.

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### GYNÆCOLOGICAL SOCIETY.

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We have been favored with a neat little pamphlet containing the Constitution and By-laws of the Gynæcological Society of Boston." The society aims at something high we should judge; its active members are limited in number, to twenty-four, who must be residents of Boston or its vicinity, while those only, can be corresponding members who are men of known good standing in the medical pro-

fession, and of eminence as Gynæcologists. The founders of the society are themselves, men of the first professional reputation.

Gynæcology is everywhere recognised as of ever increasing importance, not less by the medical profession, than by the general public ; and the latter, in its pursuit of relief from the diseases included under this head, is nearly giving itself over into the hands of Specialists, many of whom are charlatans. Judging from the names of the founders of the Gynæcological Society, it is one of its objects to prevent the separation from the general practice of medicine of a very delicate branch of the medical arts, and in this we agree with the aims of the society. The family physician is the right man to treat those diseases, and anything which will aid him in acquiring a more competent knowledge of them, is a benefaction to the profession and the public. This end we believe this society is calculated to forward ; its "Transactions" will be perused with profit ; and practitioners in the country who are actuated by the praiseworthy ambition to improve their own professional standing by being publicly associated with leading men in useful labor, will, no doubt, exert themselves to procure the honour of a place among its corresponding members

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#### PRACTICING WITHOUT LICENCE.

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An impression seems to have obtained that any one can practise dentistry that pleases ; that the only restrictions are, that no fee can be collected ; that if the *soi-disant* dentist can manage to get his pay at the time he performs his operations, he is all right so far as the law is concerned.

Acting under this impression, there are quite a number of parties travelling about the country, picking up an odd job here and there, and literally snapping their fingers in the faces of those who have paid for and received their licenses in accordance with the law.

We have frequently been asked by the latter, what they can do to prevent these perambulating gentry from carrying their wares from house to house ; whether they could be compelled by law to stop practise, or whether there is any penalty attached to the breaking of the enactment.

In reply, we beg to say that the law is very explicit on these points, being in effect as follows, viz : no person calling himself a dentist, unless he holds a valid and unforfeited certificate of license from the Board, has a right to perform, even the simplest opera-

tions in dentistry, for which he can take payment, without incurring the risk of being compelled to pay a fine of twenty dollars for every offence.

We published the act entire, in the first number of the *Journal*, for the purpose of enabling every dentist in the Province to learn exactly what its provisions are, but, it seems that other portions of the law have taken up the attention of many of the members of the profession, and caused them to forget this most important clause. For the benefits of all, therefore we print below the 18th section, which refers entirely to this subject, and we hope that no licensed practitioner will allow it to remain a dead letter. We have, most of us, striven hard to obtain the law, and if the spirit of it is carried out fully, it will be a great benefit to all, not only to the dentist, but to the people,

C. S. C.

18. "If any person, after the period of twelve months after the passing of this act, not holding a valid and unforfeited certificate of license, practices of said profession of Dentistry for hire, gain or hope of reward, and wilfully and falsely pretends to hold a certificate of license under this Act, or takes any name, title, addition or description implying that he is duly authorized to practise the said profession of Dentistry, or shall falsely use any title respecting that he is a graduate of any Dental College either in Great Britain or other countries he shall be liable to a summary conviction, before any two or more Justices of the Peace, for every such offence, and shall, on such conviction, be liable to a fine not exceeding twenty dollars, which said penalty, in default of payment, shall be enforced by distress and sale of the offender's goods and chattels; and it is further provided that no such person shall recover in any Court of Law for any work done or materials provided by him in the ordinary and customary work of a Dentist."

#### MORE EXPEDITIOUS THAN PLEASANT.

A patient of ours who had his incisors operated upon in Jamaica by a colored gentleman the dentist—gave us a description of one part of the performance, which we think too good to be lost. It gave us a hearty laugh, and we presume there are no Pecksniffs in our profession who object to that sort of thing in its proper place. During the process of separating the central incisors by filing, the operator would withdraw his file now and then and *blow into his patients mouth* to get rid of the

bone filings. Our patient says he remonstrated on the second repetition, but the dentist of dark complexion, withdrawing his file again gave another sharp blow into his patients mouth, with the exclamation, "Dar, dat's de lost blow. Cold water pain ; warm water pain : *blowing* de chips is de best."

W. G. B.

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#### S. S. WHITE'S PREPARATIONS FOR THE MOUTH.

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Dr. S. S. White; Philadelphia, has favored us with a supply of his preparations for the teeth and gums, which command a large sale among the profession in the United States. Having some happy leisure on their arrival, we set to work, and gave every one of the specimens a personal trial. Such hygienic warfare was never known before. No. 1 Tooth Powder, very elegant and fragrant ; No. 2, less delicately perfumed, but excellent ; No. 3, designed more for real efficiency than for nicety as a toilet article, but pleasant.

Then came a tooth paste, which, however we cared less for than any other kind of dentifrice. Then tooth soap, which is the perfection of dentifrices of this nature. Five beautiful mouth washes followed. Astringent Wash, combining anodyne, disinfectant, detergent, tonic and styptic properties ; Tonic Mouth Wash, stimulent and slightly astringent ; Aromatic Mouth Wash ; Boquet Mouth Wash, a beautiful, highly perfumed wash, leaving the breath fragrant ; Saponaceous Toilet Wash, a detergent alkaline preparation.

Also a bottle of superior Cologne Water for office use, and Dr. DeCamara's patent tooth powder bottle, a very convenient and chaste article.

We have the manufacturer's word, and that is as good as his bond, that all of these preparations are pure and harmless ; and we should judge from persnal examination that they would be efficient and pleasant.

The manufacturer is enabled to dispose of these preparations neatly put up, at lower prices than any dentist could possibly make them and we have pleasure in recommending them. one and all, to the Canadian profession and public.

W. G. B.

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#### THE QUEBEC ACT OF INCORPORATION.

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Below we give the Act in full, incorporating the Dental profession of the Province of Quebec. It will be seen that this Act incorporates the Quebec *Association*, while the Ontario Act left the old *Association*.

out in the cold, and only legislated thus for the College, or Board of Examiners. In some respects we think the Quebec Act an improvement on the Ontario bill, but our readers can judge for themselves. The addition of two names to the Board of Examiners was made by the Private Bills Committee in Quebec; also a few other changes. We have not space for comment upon this Act. The profession of this Province are much indebted to Mr. Ed. Carter M. P. P. for Montreal, who piloted the bill through the house, and gave his advice and active support to the measure in its early stage; also to Dr. Bernard, the worthy President of our Association and the Board, who was present in Quebec when the Act was before the House, and by his able advocacy greatly facilitated matters. W. G. P.

*An Act to incorporate the Dental Association of the Province of Quebec.*

WHEREAS, by petition, it hath been represented, that the profession of Dentistry is extensively practiced in the Province of Quebec, and that it is expedient for the protection of the public that there should by enactment, be established a certain standard of qualification required of each practitioner of the said profession, and that certain privileges and protection should be afforded to such practitioners, therefore, Her Majesty, by and with the advice and consent of the Legislature of Quebec, enacts as follows :

1. The persons named in section two of this act shall be incorporated and known as "The Dental Association of the Province of Quebec."

2. Until such other persons be elected as hereinafter provided, Aldis Bernard, of Montreal, Pierre Baillargeon, of Quebec, Charles Ferdinand Frederick Trestler, of Montreal, John Horatio Webster, of Montreal, Charles Brewster, of Montreal, James Alfred Bazin, of Montreal, William George Beers, of Montreal, Edward Lefavre, of St. Johns, Harrison Ross, of Quebec, John McKee, of Quebec and Michael Pourtier of Quebec, shall be trustees and a Board of Examiners, to examine candidates and grant certificates of license to practice Dental Surgery in this Province, six of whom shall form a *quorum* for the transaction of business.

3. The said Board to be elected as hereinafter mentioned shall consist of eleven members who shall hold office for two years; any member may at any time resign by letter directed to the secretary, and in the event of such resignation, or a vacancy occurring by death or otherwise, the remaining members of the Board shall elect some fit and proper person from among the Licentiates to supply the vacancy.

4. The persons named in section two of this act shall continue in

office for two years from the third Tuesday in September, one thousand and eight hundred and sixty-nine.

5. Every subsequent election of the Board shall be held on the third Tuesday in September in every second year, after the Board named in section two of this act have completed their term of office as provided for in section fourth of this act; nevertheless, it shall be competent by a vote of two-thirds of the whole board to order such election to take place sooner, or be held annually; said election to be held in the City of Montreal unless otherwise ordered by a majority of the said Board.

6. The persons qualified to vote at the said election shall be those Licentiates who have obtained their certificates as provided for in section fourteen of this act, before said election; and the Board named in section two of this act shall issue such certificates to such persons upon their compliance with the requisites of said section, and it shall be the duty of the secretary to publish in the *Quebec Official Gazette*, for two weeks immediately after the said election, the names of the persons who have been elected members of the Board. The said election shall be by ballot; an actual majority of the votes of the Licentiates present being necessary to an election.

7. The Board named in section two of this act shall hold their first meeting on the third Tuesday after the passing of this act, and their second meeting on the first Monday in May eighteen hundred and seventy; and afterwards shall commence their sittings on the first Monday of November and the first Monday of May, in each year.

8. All Boards to be hereafter elected, shall hold their meetings on the first Monday in November, and the first Monday in May, in each and every year.

9. The said meetings of the Board shall be held in the city of Montreal, or at such place as may be fixed by the Board, and may be continued by adjournment from day to day, until the business before the said Board be finished, but no session shall exceed one week.

10. The Board appointed by this act and every subsequent Board, shall, at their first meeting, elect from among themselves a President, Secretary, Treasurer and Registrar, and such other officers as may be necessary, and the said Board shall, from time to time, in the event of the President being absent from any cause whatever, elect from among their number, a person to preside at their meetings, who shall have the same powers, and exercise the same functions for the time being, as the President.

11. There shall be allowed and paid to each of the members of the said Board, such fees for attendance (in no case to exceed five dollars per day), as shall from time to time be allowed by the said Board.

12. All moneys forming part of the funds of said Board shall be paid to the Treasurer, and shall be applied to carry out the objects of this act.

13. The said Board may hold two sittings in every year for the

purpose of examining students, granting certificates of licence, and doing such other business as may properly come before them.

14. All persons, who have been constantly engaged for any period less than two years in established office practice, next preceding the passing of this act, in the profession of Dentistry, shall be entitled to a certificate of Licentiate of Dental Surgery, upon their furnishing to the said Board, satisfactory proof of their having been so engaged, and upon passing the required examination, and upon payment of such fees as may be authorized and fixed by the said Board, for the payment of which the Treasurer's receipt shall be sufficient evidence ; and all persons, who have been constantly engaged for two years and upwards, next preceding the passing of this act in established office practice of Dentistry, shall upon such proof as aforesaid, and upon the payment of the fees as aforesaid, be entitled to such certificate of Licentiate of Dental Surgery, without passing any examination, provided always that any persons being British subjects by birth or naturalization not being in established office practice for two years prior to the passing of this act shall be exempt from the operation of this clause if they possess a diploma from any recognised Dental Institution authorized to grant diplomas.

15. The said Board shall, at its first meeting, and from time to time thereafter, make such rules, regulations and by-laws as may be necessary for the proper and better guidance, government and regulation of said Board, and admission to, and practice of the said profession of Dentistry, and as to the mode of conducting the election of its members from time to time and not inconsistent with this act ; such rules, regulations and by-laws may be amended, altered or repealed by a majority of the whole Board.

16. Every person desirous of being examined by the said Board, touching his qualifications for the practice of the profession of Dentistry, shall, at least, one month before the sittings of said Board, pay into the hands of the Treasurer the required fees, and enclose and deliver to the Secretary the Treasurer's receipt for the same, together with satisfactory evidence of his apprenticeship, integrity and good morals, in such manner as may be prescribed by the rules, regulations and by-laws of said Board.

17. If the Board be satisfied by the examination that the person is duly qualified to practise the profession of Dentistry, and be further satisfied that he is a person of integrity and good moral character, they shall grant him a certificate of licence, and the title of Licentiate of Dental Surgery, which certificate and title shall entitle him to all the rights and privileges of this act, until such time as the Board shall be satisfied that he has been guilty of acts detrimental to the interests of the profession, when he shall forfeit his certificate and title, and it shall be cancelled ; such forfeiture may, however, be removed, and the said certificate of license, and all rights and privileges thereunder, fully revived by the said Board, in such a manner and upon such conditions and terms as may seem expedient to said Board.

18. The Corporation shall have a seal, with which every certificate of license shall be sealed, and signed by the President and Secretary of said Board.

19. The production of said certificate of license shall be *prima facie* evidence in all courts of law, and upon all proceedings of whatever kind, of its execution and contents.

20. The secretary of said Board shall once in each and every year enclose to the Provincial Secretary a certified list of the names of all persons to whom certificates of license have been granted during the next preceding year.

21. If any person, after the period of twelve months from the passing of this act not holding a valid certificate of license, practises in this Province the said profession of Dentistry for hire, gain, or hope of reward, or wilfully and falsely pretends to hold a certificate of license under this act, or takes or uses any name, title, addition or description implying that he is duly authorized to practise the said profession of Dentistry, or shall falsely use any title representing that he is a graduate of any dental College, either in Great Britain or other countries, he shall be liable to a summary conviction before any two or more Justices of the Peace, for every such offence, and shall, on such conviction, be liable to a fine not exceeding one hundred dollars together with costs; which said penalty, together with costs, in default of payment, shall be enforced by distress, and in default of sufficient distress, the defendant shall be liable to be imprisoned in the Common gaol of the District wherein such Conviction is pronounced, for a period not exceeding sixty days, unless such penalty costs and subsequent costs be sooner paid; and it is further provided that no such person shall recover in any Court of Law for any work done, or materials provided by him in the ordinary and customary work of a Dentist.

22. Nothing in this act shall interfere with the privileges conferred upon Physicians and Surgeons by the various acts relating to the practice of medicine and surgery in this Province.

23. For services performed by all Lientiates within this Province the same privileges are hereby conferred upon them as are conferred upon physicians and Surgeons by the seventh paragraph of article 2260 of the civil code of this Province.

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TOOTH PULLING EXTRA.—A lady in Sarnia was recently reading to her little son, that passage of Scripture quoted from the Mosaic Law, "An eye for an eye, a tooth for a tooth," when the boy exclaimed, "Mama, what a time the Dentists must have had then."

L. D. S.—A Correspondent from the "other side" wishes to know what these cabalistic letters which he sees appended to the names of many Canadian Dentists mean, and adds, that he supposes they stand for Licentious Dental Surgeons.

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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DESTROYING THE NERVE AND FILLING THE ROOTS OF THE TEETH.

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BY C. S. CHITTENDEN.

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For a good many years I have been in the habit, when teeth were presented to me with exposed nerves, of destroying them, and afterwards filling both roots and teeth. I have met with a great measure of success, and have, at one time or another, adopted nearly every manner of performing the operation, which has been promulgated. At the present, and for some considerable time past, I have been endeavouring to preserve the nerve alive in as many teeth as possible, of which, I propose to have something to say in a future number. So far, I have not been able to save the vitality of the nerve in every case of exposure that has come into my hands, or at least, I have not thought it advisable, under the circumstances of the case, to make the attempt, and have, therefore, in some instances, resorted back to the practice of extirpation of the nerve, and root filling. In this paper I propose to make a few remarks on the manner in which I perform these operations, on such teeth, as it appears to me, can be preserved *better* by this operation than by attempting to save the vitality of the nerve, being the conclusions which I have drawn from many years practice.

1st. That after trying several, the arsenious acid paste; composed of equal parts of arsenious acid and morphia, or of three parts of the arsenic, to two parts of the morphia, is the best devitalizer in use. I know that some condemn the employment of morphia with the arsenic entirely, and allege that it aggravates the pain of the destruction of the nerve, but it has proved so very beneficial in my practice, that I cannot help thinking that the fault has lain in the manner in which those parties have applied it. It is seldom that a person complains of anything more than a slight uneasiness after I have made the application. I feel sure that in most cases where severe pain has been produced by the use of the paste it has arisen either because there was a layer of partially softened dentine between the paste and the nerve, or the covering placed over the paste to retain it, has been driven too firmly into the cavity, so as to produce pain by direct pressure on the nerve.

2nd. In applying the devitalizer, whether arsenic or anything else, I use as little as will do the business effectually, and apply it directly to the exposed surface of the nerve if possible, and allow it to remain for twenty-four hours.

3rd. In removing the dead nerve, to do it thoroughly and at the first sitting, thus leaving nothing to decompose and generate gasses. It is not an easy task to do this in every case, but it should be done as thoroughly as possible, and as success depends in a great degree on this part of the operation, I spare *no pains* in doing it. If necessary I drill through sound enamel and dentine to enable me to gain direct access to the root canals, as it is far easier to work on a line with the axis of the root; with a straight broach than with curved instruments through the cavity of decay.

4th. After removing the nerve I apply whatever dressing the circumstances of the case seem to demand, (I seldom employ more than four remedies, viz: creasote, carbolic acid, iodine, and nitrate of silver,) and I see that it is perfectly covered. If a topical remedy is applied to any part of the body, it is essentially necessary that it should remain in contact with the affected part to effect a cure, and it is fully as essential in treating a tooth, for if the dressing is not covered so as to prevent it, the saliva will find its way into the root canals, and dissolve the remedy or force it out, and then decompose itself, thus hindering, if not actually preventing the action of the drug. I

believe that a great part of the failures in root filling have arisen from allowing the secretions of the mouth to gain access to the root canals after the nerves have been removed. Sandavch varnish or Gutta Percha cut in Chloroform form excellent coverings for a dressing when it is intended to remain but a few hours, but it requires something more durable when the patient is to be absent for any length of time. I frequently cover my dressings with Hill's Stopping, and allow them to remain for days and even weeks, and find all right when the patient returns. I frequently find it an excellent plan also, to fill the pulp cavity with tin foil in order to exclude the saliva, when the grinding of the food will wear out the Hill's Stopping.

5th. When I find that there is no tenderness in the tooth on percussion, and other circumstances indicate that "all is well within," I proceed to fill the root canals with gold. I usually introduce a little creasote first, for this reason, creasote is laid down in the Pharmacopœias as a stimulant, an escharotic, and an anti-septic, and as there is, in nearly every instance some probability that a small portion of the devitalized nerve has been left near the apex of the root, I hope that the anti-septic properties of the drug will prevent putrifaction and the formation of gasses, which, if not counteracted will excite the periosteum about the end of the root, and cause a sensitiveness in the tooth on the occlusion of the jaws, if it does not proceed further and cause an abscess. I can give no positive rule as to the manner of introducing the gold, as I am governed by the circumstances of the case.

6th. While I am of the opinion that it is best to fill the roots with gold, I am fully persuaded that teeth may be preserved for a long time, if not for life by filling them with Hill's Stopping, or a piece of wood, or cotton saturated with creasote. In favorable cases, no doubt good results have followed the practice of leaving the root unfilled. Indeed, I can see no reason why the nerve, when cut off at the end of the root of a tooth, should not cicatrize as healthily as when severed at any other point, if no dead, or partially devitalized portion is allowed to remain in contact with it.

8th. I think that there is a much greater chance of *perfect* success with some teeth in the same mouth, than with others. There can be no doubt whatever, as to the incisors in ninety-nine cases out of a hundred. I have found that the bicuspid, particularly the lower ones,

are more liable to give trouble after filling than any of the other teeth, which, I attribute to the form of their root canals. The roots of these teeth are large and flattened, and of course the canals assume nearly the same form and are often nearly divided through the centre of their axes by a compression of the posterior and anterior walls, thus rendering it exceedingly difficult to remove the dead nerve perfectly.

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### PREMATURE DECAY OF THE TEETH.

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BY R. TROTTER

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No question is more frequently asked the dentist, and there is none which he ought to be better prepared to answer than, "What is the cause of the early decay of the teeth?" To be better prepared to answer this question properly, and to duly appreciate the importance of it, requires a knowledge extending far beyond the boundaries which are generally considered sufficient for the dental practitioner, and is an important example of the necessity of the profession aiming higher than merely acquiring a sufficient mechanical knowledge to fill, extract, or insert teeth. It involves the necessity of a knowledge of physiological laws, more particularly digestion, nutrition, and hygiene. The human system is not a dead, inert machine, which may be patched or altered at the whims or caprice of a mechanic, but is regulated by inflexible laws, and must be dealt with accordingly. The organs of digestion are wonderfully adapted by the creator to elaborate from the bounteous provisions that have been made to supply man with all he requires; and as long as he confines himself to the simple dictates of nature, or natural appetites and tastes, every tissue will receive its normal supply of nourishment. But civilization with its concomitant artificial wants and luxuries, have sadly perverted his nature, and notwithstanding its many elevating tendencies, he has widely deviated from the laws which should regulate his mental, moral, and physical constitution. The result has been degeneration. It was never intended by the creator that man should be the subject of misery and suffering from infancy to old age, or that organs playing such an important part as the teeth, in the animal economy, should be the cause of pain and physical disturbance, from eruption till their removal. It is true that the "fall" sowed the seeds

of death, but the cultivation of them has been with man himself, and he has succeeded in bringing them to maturity to a deplorable extent. He was intended to come into the world with every organ performing its functions, normally, until in due course of time, natural decay returned him to the dust from whence he came. As far as the teeth are concerned, and these are what we have to deal with, how many come short of realizing the designs of nature. It is quite the exception to find a person who has not been the subject of suffering and premature decay of these organs, before arriving at the prime of life. The state of the general health during the formation of the teeth determines the quality of these organs, and consequently their susceptibility to morbid impressions. It is now a settled point that teeth in a normal condition receive regular nutrition the same as any other organ or tissue of the body, and that their health and vigor depend upon the manner in which all the other organs perform their function, and the supply of such elements of nutrition as their nature requires. Such being the case, how obvious it is that a strict compliance with hygienic laws is necessary, for a normal condition of these organs, during the period of gestation and after life. The teeth being, perhaps, more remotely situated from the centre of the function of nutrition, in fact being at its periphery, and having less recuperative power than any other tissue, and being more exposed to the action of morbid agents, it is the more necessary that special attention be paid to everything pertaining to their well being. It will be my object in a future article on this subject to point out wherein man has failed to carry out the designs of his nature, and the reasons of the premature decay of the teeth.

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## PROCEEDINGS OF SOCIETIES.

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### DENTAL ASSOCIATION OF WESTERN NEW YORK.

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The seventh semi-annual session of this Association, was held in the Supervisor's room, Court House, Rochester, commencing on Tuesday the 4th instant, at 10 a m.

Dr. French, the President, in the chair.

Dr. W. C. Barrett, Secretary.

The minutes of the last meeting were read and confirmed. Dr.

Whitney introduced Mr. R. Trotter of Guelph to the Association, and moved that he be elected an honorary member. *Carried.*

On motion, the following committees were appointed, viz: To prepare a report of the proceedings for the city press—Dr. Requa of Rochester, and Mr. Chittenden of Hamilton. On revision of the By-laws—Drs. Whitney, Bristol, and Southwick. On membership—Drs. Barrett, Coleman, and Daboll.

The committee appointed at the last meeting to report on Rose Pearl as a base for artificial teeth, were instructed to act, and report, as a committee on mechanical dentistry.

The President appointed Drs. Bristol, Requa, and Mayhew, a committee to prepare subjects for essays, and to appoint essayists for the next meeting.

Drs. Coleman, L. J. Walter, and Clark, were requested to act as a committee to make the necessary arrangements for clinics.

Communications were asked for from foreign dental societies, but more particularly from the Dental Association of Ontario, as there were two gentlemen, members of that Association, present.

Mr. Chittenden remarked that he and Mr. Trotter had not come to the meeting as delegates from the Ontario Association, but to listen to the discussions, and form the acquaintance of the members of this Society.

Mr. Trotter said that one of the objects which he and Mr. Chittenden had in view, in attending this meeting, was to endeavor to bring about a more reciprocal feeling between the members of the profession in the two countries.

Dr. Barrett said that he was pleased to see the gentlemen from Canada, and hoped that a delegate would be appointed by this Association to attend the meeting of the Association of Ontario at its next session.

Dr. Whitney said that hitherto, the Constitution of the American Dental Association had prevented their admitting delegates from Canada or any other foreign country to membership, but he hoped and believed that at its next session, the constitution would be so amended, as to admit them to all the privileges and benefits of that Association.

The committee appointed to draft such amendments to the Constitution as would make it conform to the requirements of the Act

respecting dentistry, and the code of ethics of the American Dental Association, presented a report, which, on motion, was adopted.

The committee on membership, reported in favor of the admission of the following gentlemen, viz: Drs. Bowen, Pritchard, and Fowler, who were elected by an unanimous vote; after which they signed the Constitution and Code of Ethics, and were declared entitled to full membership.

The committee on Rose Pearl as a base for artificial teeth, reported through their Chairman as follows, viz: Your committee have nothing favorable to report, but on the contrary, with the little additional evidence they have been able to obtain, including the experience of Dr. L. D. Walter, the previous impressions as to the want of utility of Rose Pearl, are more than confirmed. It only approximates in the most favorable cases to the requirements necessary to produce a perfect fitting plate, and in comparison to rubber and other materials used as bases, may be considered as an utter failure, even in the hands of the best of operators in mechanical dentistry.

Signed,

G. C. DABOLL.

Dr. Daboll exhibited a case which had been worn for some time, and had afterwards been laid aside for a few days, which had shrunk, or changed its form so much that it could not be put into the mouth. The smell of ether was so strong at that time, that it was almost unbearable. After some further discussion, Dr. Whitney stated that in Buffalo and vicinity, eight practitioners had purchased the right to use Rose Pearl and after duly testing it, found it to be a failure. He, however, would not entirely condemn it, as by further experiments, it may possibly be made eminently useful. The report of the committee was adopted and ordered to be placed on the minutes.

The first subject on the list for discussion, was, "Nitrous Oxide Gas, and other anæsthetics, their comparative merits," Dr. A. P. Southwich, essayist. Dr. Southwich not being present, the President called on the members to state whatever information they had on the subject. Dr. Barrett said he had used nitrous oxide for two years, and the longer he used it the better he liked it. It can be kept for a great length of time without deterioration, over water, which absorbs its impurities; thinks it acts by hyperæsthesia, that is, over stimulation; always watches the pulse closely to see that it does not go beyond the right point; has given it to persons seriously troubled with dis-

ease; had given it recently to a lady who was supposed to be in consumption, whose physician had advised her not to take any anæsthetic; had given it to her at three different times for the purpose of extracting teeth, without any ill effects whatever; in fact, the lady seemed to be much improved in health since the extraction of the teeth; would not say that it was the nitrous oxide that had benefitted her. From his experience he thought it was *the* anæsthetic for dental purposes; never having had any bad results from its use. Thinks it acts not by depression, but, as one might say, it lifts the patient above the sense of pain.

Dr. Fowler fully endorsed the remarks of Dr. Barrett; always made it a point to gain the entire confidence of the patient; always endeavors to allay the nervousness of the patient by turning the direction of the mind to such subjects as will be pleasing. He said he had extracted sixteen teeth at one sitting, under the influence of the gas, but, cannot always take out as many, before the patient becomes conscious. He keeps it over water, and has kept it in that way for three weeks. Patients sometimes fancy that they feel pain, but, he doubts whether it is not a sort of dream.

Dr. Coleman said he had used anæsthetics for several years, but had had the best success with nitrous oxide; always assures the patient that it is not going to give any pain, and strives to impress the mind of the patient favorably when the effect of the gas commences; he too, had extracted as many as sixteen teeth at one sitting; considers the gas as good after standing for three weeks as when made.

Dr. Barrett said he had given the gas in a case of endocarditis, without any ill effects, but has never given to any one affected by organic disease of the heart; he always refuses to give it in cases of inflammation of the lungs.

Dr. Pritchard would like to learn something of the physiological action of the gas, and whether the patient obtains any oxygen from it.

Dr. Barrett wishes to say that in his opinion, we are just feeling in the dark in this matter; that when giving nitrous oxide or any other anæsthetic he always feels that he is taking the life of his patient into his hands, and has everything ready to restore the patient if he finds he is sinking; never gives it for trivial reasons; thinks we should use the greatest caution, until we know more fully the action of the agent, or the result may be fatal.

Dr. Cook said that so far, no one has given us any idea as to the best means to adopt to recover a patient from the effects of the gas. He had, at one time, used it to a considerable extent, but had now abandoned it altogether.

Dr. Fowler could not answer Dr. Pritchard's question, as to whether oxygen was obtained from the gas, while in the lungs. He had given it probably ten thousand times to patients, and so far, has never met with any serious results; he had given it six times in succession to the same patient; he gave it in one instance to a person very seriously affected with disease of the heart.

The President thought that nitrous oxide as an anæsthetic was a failure. He had never seen but one person perfectly unconscious from its administration.

Dr. Requa replied that, in some instances, the presence of the patient's friends seemed to distract the mind, and prevent the gas from taking full effect. He had no trouble in getting patients fully under its influence when all is quiet. He can tell when the patient is fully anæsthetised by the appearance of the countenance, and the eye. He always sees that the dress is loose enough to allow a full expansion of the lungs.

Mr. Trotter remarked that this is a very important subject, requiring a great deal of time to be spent in experimenting. As yet there appeared to be no definite idea as to the therapeutical effect, or the *modus operandi*, of the drug on the system.

Dr. Whitney said he did not believe that any one knows how anæsthetics act on the system. He agreed with Mr. Trotter that there ought to be more really scientific knowledge among us, as to the effects of anæsthetics.

Dr. Simpson, himself the discoverer of chloroform, has never given us any definite idea as to its *modus operandi*. He thought that all theories as to the therapeutical effects of anæsthetics were purely theories. The blood becomes venous from a want of oxygen, and an excess of carbonic acid gas. Does not think that one particle of oxygen is obtained from the nitrous oxide. It was a rule with him never to give an anæsthetic to a patient with a full stomach; an hour and a half should elapse after eating before he would be willing to give an anæsthetic. He objected to giving nitrous oxide from a bag, as the patient in that case would breathe the same thing over

and over again—in fact, after a few inhalations, the patient would be breathing, not nitrous oxide and carbonic acid, but carbonic acid and nitrous oxide. When anæsthesia had been carried too far he thought there was but one rule to adopt to restore them. Ordinarily, in such cases, the tongue falls back and closes the larynx so that no air can pass into the lungs. The first thing to be done, is to draw the tongue forward ; some means of doing this should always be at hand, so that there need be no delay ; then artificial respiration should be resorted to, and then stimulents ; chloroform and nitrous oxide antidote each other. In reply to a question, he said that nitrous oxide would keep well over water, but he would be afraid to use it after having been kept in a bag.

Dr. Pritchard thought that much of the excitability which is often produced, arises from the keeping of it in bags, as it is likely to become mixed with air.

Dr. Cook stated that he had discovered a new anæsthetic, the effects of which, he would show at Dr. Requa's office, to any who would like to attend.

Dr. Bristol said we know so little of the effects of anæsthetics as yet, that we should make very poor witnesses on the subject in court, and agreed with Mr. Trotter that a committee of scientific men ought to be appointed to determine the *modus operandi* of their action.

Dr. L. D. Walter moved that a committee be appointed to confer with scientific men in the other professions, with the object of determining what effect anæsthetics have on the system. *Carried.*

On motion, the next three subjects for discussion were laid over, and Doctor Bristol of Lockport, was called on to read an essay on "Miscellaneous subjects," which he at once proceeded to do.

(We gave most of the Doctor Bristol's essay in our last No.)

The committee appointed to make arrangement for clinics, reported the names of Doctors Fowler, Chittenden and French as operators ; the clinics to be held at 8 a m, at the office of Dr. L. D. Walter.

The subject of exostosis having been spoken of in the paper by Dr. Bristol, came up for discussion ; several of the dentists taking part. There was a general agreement as to the treatment, viz : "good, honest, extraction," as Dr. Bristol expressed it. As to the cause of exostosis, very few of the members seemed willing to express an opinion.

Dr. Whiting on being asked, said he thought exostosis very often arose from some irritation about the parts, or from a severe concussion, or sudden jarring of the tooth. He thought it frequently arose from constitutional causes. Irritation about the parts sometimes terminates in ossification, but more frequently in ulceration.

The employment of phosphate of lime, having formed a part of the "Miscellaneous Essay," was then taken up. Several of the members strongly urging the necessity for its use under the present system of dieting.

Mr. Trotter remarked that the administration of phosphate of lime might be, and undoubtedly is very beneficial under existing circumstances, but, he thought we ought to go further and educate the people on the necessity of proper dieting, as we know that a large portion of the necessary elements which go to make healthy teeth, is taken out of the food, during the process of manufacturing it.

Dr. Fowler thought that the members of the profession had not heretofore done their duty, in this respect, to the public, and recommended that every dentist should write short practical articles for the newspapers, instructing their patients as to what they should, and what they should not eat, in order to produce a better development of the dental organs in the rising generation, and to teach people how to preserve their teeth better after they were fully grown.

Mr. Chittenden quite agreed with the remarks of Dr. Fowler, and, acting upon the principle of giving the public such instruction, he prepared a small pamphlet for public distribution, which he presented to the Dental Association of Ontario, the members of which subscribed for twenty thousand copies.

Dr. Whitney said he was present when Mr. Chittenden read the pamphlet of which he had just spoken, and that he was never more pleased than when he saw the members of the Association rush to the Secretary's table to subscribe for it. It showed, he thought, that in the desire to educate the public, the dentists of Canada were far in advance of the dentists of the United States.

The hour for adjourning having arrived, the President declared the meeting adjourned until the next morning at 10 a m.

(TO BE CONTINUED.)

## THE SEVENTH DISTRICT DENTAL SOCIETY.

The members of the dental profession residing in the 7th Judicial District of the State of New York, met in the Court House, Rochester, on the evening of Tuesday the 4th instant, for the purpose of perfecting their organization, under the "Act of the State Legislature, incorporating the dental profession."

Dr. Frank French of Rochester, President, in the chair, and Dr. J. L. Clark of Waterloo, Secretary.

The committee appointed at a preliminary meeting held in March last, to draft a Constitution and By-Laws, made their report which was adopted. The Constitution and By-Laws after having been carefully examined and discussed by the members present, was adopted, as it came from the hands of the committee, by an unanimous vote. After which the meeting adjourned to meet again in the city of Rochester on the last Tuesday of June.

## SELECTED ARTICLES.

## DOES NITROUS OXIDE, WHEN INHALED, FURNISH OXYGEN TO THE BLOOD?

BY A. WESTCOTT, M. D., D. D. S., SYRACUSE, N. Y.

THIS being an important practical question to the dentists, as well as to those who are to inhale this gas for its anæsthetic effects, I propose to set forth the *chemistry* of this matter through your widely circulated and able dental journal—the DENTAL COSMOS. I should hardly have regarded this as an open or unsettled question at this late period, had my attention not been called to a discussion of it, or rather to an *opinion* upon it, adverse to my own, by two of our most learned professors in two of our best dental colleges. The gentlemen to whom I allude are Professor McQuillen, of the Philadelphia Dental College, and Professor Buckingham, of the Pennsylvania College of Dental Surgery.

Both of these able gentlemen have taken the ground that nitrous oxide not only furnishes oxygen to the blood during its respiration, but that it furnishes it in "*excess*" as compared with atmospheric air, as will be seen in the report of their remarks upon this subject in the proceedings of the Odontographic Society, Sept. 1st, 1868—commencing on page 535 of the DENTAL COSMOS.

Few are ignorant of the fact that the oxygen of the air is absolutely necessary to support life, and also of the necessity of its being diluted with nitrogen. Now, while the former would prove *too stimulating* (not exhilarating) if breathed in the pure state, the latter would destroy life still sooner, by reason of its possessing no life-supporting quality. But these *mixed* (not chemically combined), as in the atmosphere, in proportion as one of oxygen to three of nitrogen, constitute a medium just fitted for respiration.

The error comes of blending a mere mixture, where each gas retains its own elemental properties, with a chemical combination where both elements are absorbed in a new compound, differing essentially in all its properties from either element. In any mere mixture we may always calculate with certainty the result, on knowing the nature and proportion of each of the constituents. Milk, spirits, or any other article mixed with water does not lose any of its own properties, but is simply diluted. Precisely so is it with the oxygen of the air. It is simply diluted with nitrogen, a gas having, as a simple substance, no active property. But the case stands very different when these elements are combined chemically. By the agency of chemical affinity, the most simple elements may result in the most acrid compounds ; and, on the other hand, the most acrid substances form the most harmless and inert compounds. An example of the former we have in the union of oxygen and nitrogen (simply the elements of the air we breathe), which results in nitric acid ; and of the latter in the union of sulphuric acid and lime, resulting in the tasteless and harmless substance, plaster of Paris. To illustrate the *entire antagonism* between a compound and its constituents, we can refer to none more striking than that produced by the union of oxygen and hydrogen. While the former is the great and almost the only supporter of combustion, the latter will not support combustion, but is one of the most inflammable of all substances. The resulting compound of the chemical union of these two gases is *water*, a substance wholly antagonistic in all its properties to both of its elements. Now, it would be just as rational for one to contend, while drinking water or breathing its vapour, that he was drinking or breathing oxygen as when it was chemically combined with any other substance. The universal law of chemistry is, that whenever any two substances are united by chemical affinity, the

properties of both are changed, and the result is a third substance differing from either, and that the elements in such compounds cannot act in their individual capacity, till a positive decomposition is effected. And hence the perfect absurdity of supposing that we are breathing oxygen, simply because we may be inhaling something containing oxygen as a chemical constituent.

These examples might be multiplied *ad infinitum*, but I shall offer but one other, which will not only illustrate remarkable changes wrought by chemical affinity between *different* substances, but where an equally surprising result is obtained *by combining the same substances simply in "different proportions,"* and I can offer no better example than is seen in these very gases—oxygen and nitrogen—in the different proportions in which they are capable of being united. Bearing in mind the nature and properties of these two gases, as simple substances, or when they are simply *mixed*, as in the atmosphere, let us see what changes are wrought by *chemically* combining them, and in different proportions.

These two gases are capable of being combined in five different proportions ;

PROPORTION.				RESULT.
1st.	Oxygen 1,	Nitrogen 1—	Nitrous Oxide—[laughing gas].	
2d.	" 2,	" 1—	Nitric Oxide.	
3d.	" 3.	" 1—	Hypo-nitrous Acid.	
4th.	" 4,	" 1—	Nitrous Acid.	
5th	" 5,	" 1—	Nitric Acid [aqua fortis].	

It is not necessary to describe the peculiar qualities of all of these compounds. It is sufficient to say that, while one proportion of oxygen and one of nitrogen, *chemically combined*, form the exhilarating or laughing gas, *two* proportions of oxygen, with the same amount of nitrogen, form the nitric oxide gas, a single inspiration of which would destroy life almost instantly. And *five proportions of oxygen* with one proportion of nitrogen, constitute nitric acid, or aqua fortis—a substance not tolerated by any part of the human system for a single moment.

But if the theory above alluded to be correct, viz., that the more oxygen a compound contains the more healthful and exhilarating it becomes," then nitric acid, containing five times the relative amount of oxygen that nitrous oxide does, should be five times as healthful and exhilarating as the latter gas !

The upshot of this whole matter is simply this : no man, however good a chemist he may be, can predict the nature of a compound by any study of its elements, much less its effect upon the human system. This is to be done and only to be done, by actual experiment. The chemist who first discovered that the combination of one equivalent of each of the two gases, oxygen and nitrogen, constitutes the exhilarating gas, was of course entirely familiar with the nature and properties of both of its constituents, and yet he was doubtless not a little surprised to find the resulting compound was of such a character, nor could his surprise have been less when he found simply that by doubling the amount of oxygen, the resulting compound was of a most deadly character, as it regards its effects upon the human system.

Now, if I have not misstated chemical facts, I ask if there is, in view of these facts, the first shadow of a reason for supposing that nitrous oxide can furnish one particle of oxygen for purposes of respiration ?—or can a person live longer in such an atmosphere (so far as relates to this fact) than he could live under water ?

I have confined myself in this article strictly and purely to the question which heads it, but should this hasty paper find favor in your journal, or a place in your pages, I will, hereafter, give its readers my own views upon the relative merits of the three anæsthetics in common use—chloroform, ether, and nitrous oxide gas—together with their chemical composition, and their physiological and pathological effects upon the human system ; simply now adding that neither of them, in my judgement, furnishes the least possible amount of oxygen in an available form to support respiration. *Dental Cosmos.*

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### ALVEOLAR ABSCESS.

BY DR. W. H. SHADOAN.

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[Continued from page 239.]

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#### TREATMENT.

By treatment is meant all means employed for the cure of disease. The treatment of abscess may be divided into three classes, *Preventive*, *Therapeutic*, and *Surgical*. The preventive may embrace all means employed, and in order to be the better understood, and to avoid

confusion, we will arrange our classes of treatment, commencing with

#### PREVENTIVE.

In this class of treatment we often have to resort to general as well as local means. An abscess may, in some instances, be prevented by antiphlogistic treatment, such as saline cathartics, leeching the gums, and anything of a cooling nature, either constitutionally or locally applied. There are so many different remedies for different cases that it is impossible to give a single remedy that will suit all. Where we wish to prevent the formation of an abscess the first and most important thing to be done is to remove the exciting cause. If the pulp be dead in a tooth, its removal will in many cases, prevent the formation of an abscess, or the removal of any foreign body, such, for instance, as the roots of dead teeth, or any thing that proves an exciting cause. Sometimes the application of a counter-irritant to the gums, when the use of leeches is impracticable. The gums may be scarified and bathed in warm water to promote bleeding which will, usually, prove beneficial. Painting the gums well with compound tincture of iodine is also attended with good results. I have also found great relief in the application of croton oil to the gums; a saturated solution of creosote and iodine as a local application is invaluable in many cases. For the last year or two I have been using, with great satisfaction, "*Mercurius vivus*," (third trituration,) which, for acute periosteal inflammation, in many cases has no rival, except where the system is very susceptible to impressions of mercurial agents, when it should not be used. If the case is found to be too obstinate to yield to the preventives used, the only course left for us is to use palliatives until the sac is formed and then adopt the kind of treatment indicated.

"Pressure will limit the outward wave whenever applied upon a purely healthy portion of structure, and define the size of an abscess by turning back the wave of nutrient activity in the deteriorated part upon itself, preserving the outward sea from threatened disturbance." Vigorous or active exercise, both bodily and mental, have a powerful influence on incipient abscess, and sometimes cure entirely. Why, or how this is done may not be very well understood, nevertheless it is true, and may be accounted for by the inviting away of the nerve force and current of blood, and literally starving the abscess. When therapeutic agents are used the principle of their action is very much

the same as that of pressure in arresting the wave of poisonous nutrition, and in like manner they abate or greatly reduce the size of the sac.

#### THERAPEUTIC TREATMENT.

Of the remedial agents for the cure of alveolar abscess we will mention *creosote*, *nitrate of silver*, *chloride of zinc*, *chlorate of potassa*, *iodine*, *iodide of potassium*, *bromine*, and *bromide of potassium*, etc.

#### CREOSOTE.

*Creosote* was discovered by Reichenbach, of Blenkso, in 1830; it is procured by the dry distillation of various vegetable as well as animal substances, but is officinally described to be obtained from wood tar. It is a colorless, oily liquid, of a peculiar, disagreeable and penetrating odor, resembling that of wood smoke, and has a burning, acrid taste which is perceived throughout the whole extent of the buccal, nasal, and pharyngeal mucous membrane. Its specific gravity at 68 ° F. 1.037. It boils at 397 ° F., and is frozen at 17 ° F. It burns with difficulty in the air, emitting large volumes of smoke. It coagulates albumen but exerts no action upon fibrin. Owing to these facts, and its strong antiseptic properties, it is considered one of the best therapeutic agents in the cure of all ulcerative affections. This substance is more peculiarly adapted to the treatment of alveolar abscess than any other known agent. "Creosote is an active caustic. Its escharotic power is due to its affinity for albumen, which is so strong as to take the latter from living tissue and thus destroy vitality to the extent of the combination. Its compound with albumen is white, hence the extent of its escharotic action is readily observed." In addition to its strong affinity for albumen with which it rapidly forms a permanent insoluble compound, it possesses the valuable property of arresting and preventing the decomposition of animal matter, which renders it preferable to any other agent that has hitherto been introduced for the treatment of abscess. "Its great penetrating power enables it to pervade every part of the cavity and diffuse itself over the entire surface of the sac, thus effectually securing the desired result." It is also one of the most energetic stimulents.

The mode of applying *creosote* is usually by injection. In some cases, however, where the fistulous opening is large it may be applied by saturating a pledget of cotton or lint and forcing it into the cavity

formed by the abscess. The most successful means of applying creosote is by injection. I find this most readily done by the use of a syringe when the liquid is to be inserted through the fistulous opening, but if the root of the tooth is well opened then the pulp cavity may be filled with gutta percha or Hill's stopping, through which drill a hole for the insertion of the point of the syringe which will greatly facilitate the operation. Another manner of injecting an abscess is preferable to the above, inasmuch as it is less complicated and will allow a much more thorough operation than with the syringe especially if the foramen be small. This is accomplished by shaping a broach of a piece of pivot, or any hard wood, such as straight grained hickory, barb the point, around which roll loosely some cotton, this dip in the creosote and use as a piston, dipping it into the creosote every few seconds and forcing it into the sac until the patient complains of pain. If there be a fistulous opening through the gums the creosote can, in nearly all cases, be forced through the tooth, sac, and gum. This is indicated by the surface around the fistulous opening turning white, and is an indication that the process has been carried far enough for that time. If the operation has been thoroughly performed, the creosote having pervaded every particle of the sac, there is little doubt that a cure will be effected, other things being favorable. I find, in many cases, a cure may be effected in healthy patients with a single application of the creosote. In most cases all can be accomplished with creosote that can be with other agents, so I seldom use anything else for that purpose. Were it not necessary in a paper like this to give all the remedies used I would let the above suffice, but to meet the views of all, other remedies will be given.

#### NITRATE OF SILVER.

Although this remedy is but little used, it is occasionally employed and is deserving a place in the catalogue of *remedies*, a consideration of its merits will not be regarded out of place.

*Nitrate of silver* is a white salt having an intensely metallic, bitter taste, it is usually prepared in the form of hard brittle sticks; at first it is white but becomes gray, and afterward more or less dark under the influence of the air. It was once thought that the light caused this substance to turn dark, but this is shown to be erroneous. The turning dark is caused by organic matter or sulphuretted hydrogen contained in the air. Silver coin will be affected in the same way.

Its affinity for animal matter is evinced by its forming definite compounds with albumen and fibrin. *Nitrate of silver* is soluble in its own weight of water and in four parts of alcohol, its solution stains the skin an indelible black color ; when exposed to heat it fuses at  $426^{\circ}$ , and at  $600^{\circ}$  undergoes decomposition with evolutions of oxygen and nitrous acid.

*Nitrate of silver* is employed as a vesicant, stimulant, and escharotic, either dissolved in water or in its solid state. It may be used in abscess for two purposes, one to break up the sac, the other to heal the ulcer, and when employed for the latter should be applied in solution of about two or three grains to the fluid ounce of water ; a drachm of the salts to an ounce of water forms an escharotic, and may be injected into the sac of an abscess. I usually prefer the solid nitrate to the solution. I find the best and most convenient mode of applying the nitrate in the solid state is by pulverizing the crystals as finely as possible, and by means of a small slightly tapering silver tube they may be carried into the sac with little difficulty. There is another way of introducing the nitrate that may be well to mention ; take a small stick of the salts, about the size of the lead in a common pencil, and upon it form a covering of melted engraver's wax, this done, trim off a portion of the wax at the point and insert it rapidly, not allowing time for the substance to dissolve and stick to the flesh. This method is not so successful or satisfactory as the other. The injecting of the solution may be conducted in the same way as that of creosote.

#### CHLORIDE OF ZINC.

As this remedy is seldom used I shall not enter into a detailed account of its administration and uses. The chief employment of the chloride of zinc has been externally as an escharotic, applied to schirrhous and cancerous affections and to ulcers of an anomalous and intractable character. When thus used it acts not only by destroying the diseased structure but by exciting a new and healthy action in the surrounding parts. It may be applied in the same manner as nitrate of silver. The greatest benefit resulting from the use of chloride of zinc is in the reproduction of alveolar process, where it has no rival. The chloride should not be used oftener than once a day for one or two days. Then, if the application has been thorough, there is no further use for this agent.—*Dental Register*.

(TO BE CONTINUED.)

ON THE NECESSITY OF ARTISTIC KNOWLEDGE AND  
CRITICAL TASTE TO HIGHEST SUCCESS IN THE  
DENTAL PROFESSION.

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By G. H. PERINE, D. D. S.

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The art of healing, including medicine and surgery, of which latter dentistry is a special department, centres upon itself a wider range of collateral science than any other. It draws from every source of information something which can be applied to the alleviation of the miseries of mankind. Dentistry being only one department of the art, does not necessarily demand from its professors so wide a range of medicine and surgery combined, but there are doubtless few who practice it that are as yet aware how far the resources of the profession can be enlarged, by knowledge of principles and facts pertaining specially to other arts and professions. The object of this paper is to call the attention of the profession, especially its younger members, to the importance of the study of the fine arts, particularly that of portrait painting and modelling, with reference to the direct application of the knowledge and the critical taste thus gained, to the practice of dentistry ; and also to show how such application can be made to the rational correction of malformations and artificial deformities.

Comparatively few are gifted by nature with perfectly formed jaws and teeth, but in the present state of the art we should hesitate to avow that any ordinary case of malformation could not be corrected, and that without the sacrifice of teeth or the infliction of serious pain or inconvenience to the patient.

But natural malformations are scarcely more frequent than artificial ones, caused by the injudicious and unnecessary extraction of teeth. It should be admitted as an axiom of modern dentistry, that *the extraction of any tooth from a young or old jaw, is certain to give rise to more or less permanent deformity.* Surely it is unnecessary at this day to substantiate this truth by argument. Every dentist has the proof at hand in the casts of jaws from which teeth have been removed. Let him compare the side of the jaw from which teeth have been taken with that in which the teeth remain, and assign if possible, any other reason for the difference, which is certain to be found.

Such deformity is much more likely to occur, and to assume exaggerated proportions in young jaws, yet it is the constant practice of

many otherwise excellent practitioners, to remove deciduous teeth, as though they were of no great consequence, thereby assuredly inflicting a lifelong injury upon the features of the little patient, unless a subsequent treatment shall avail to correct the injury. The plea for the practice is the correction of malformations, as when the teeth are crowded, and are growing "all awry," to make room for the remaining ones. Without wishing or intending to be severe, I assert that it would be just as rational to remove one entire jaw to make room for the other, as to remove one or more teeth to give others room. Further on I shall describe a more rational practice ; before doing so, however, I wish to show how artistic taste, and, if possible, manual skill in painting or modelling, will aid the dentist in correcting deformity.

In most cases in which the aid of the surgeon is invoked for the correction of deformity, a standard of comparison by which the amount of deformity can be determined, is at hand, in the corresponding opposite part. A few operations about the face are exceptions. In cases of talipes when both feet are involved, his aim is to equalize as far as possible both members. The dentist is without this standard in many cases of artificial distortion ; the deformity on one side drawing out of their proper position the muscles of the face upon the other, so that no very accurate idea can be obtained in the ordinary mode of examination, of the real form of features previous to the date of the defect. To remedy the defect so as to make the features *better*, should not be the limit of our ambition ; we should endeavor while we have the matter in hand to so operate that the *best* expression shall be given to the features compatible with the character of those features upon which it is not our province to operate.

We are here working upon plastic material which we can mould and fix in any desired position ; why then should we stop at anything less than perfection, if we are prepared to judge accurately what is perfection ? It is my intention to confine myself in discussing this part of the subject to the importance of an application of the principles of art in the treatment of such cases as I have mentioned, not to write an essay upon art ; yet I cannot forbear calling the attention of the younger members of our profession to the part which the lower features of the face perform in the general expression. A very slight distortion is sufficient to render an otherwise beautiful

face, almost ugly, as an experiment with an ordinary card photograph will easily demonstrate. Especially is this the case with the female face, the lower portions of which cannot be concealed by beard, and to which any deformity is a serious calamity.

I need not add that a dentist skilful in the correction of such defects, secures to himself a practice which, although it may tax his patience, is certainly remunerative.

The distortions arising from the loss of teeth are in some cases so great that a comparison of the features with photographs taken before their extraction, will often surprise even one accustomed to making such comparisons. The extraction of the cuspids in childhood alters the features more than the removal of any others, yet these teeth are often ruthlessly sacrificed, by practitioners from whom a more rational practice ought to be expected. I have in my possession a photograph of a young lady now 24 years of age, who about two years since had the right upper cuspid tooth extracted. I am now treating her with a view to the correction of a marked distortion resulting from the loss of that tooth; a distortion so marked that it has been a source of great mortification to the patient. The face is drawn to the right and, what upon the evidence of the photograph alluded to, were once remarkably well-formed and expressive features, have been most sadly, though I trust not irreparably, marred.

In cases of this kind, a photograph of the patient taken previous to the loss of teeth, is an invaluable guide to the dentist in correcting the defect. But it often happens that such a guide cannot be obtained. When this happens his power of analysis, and his artistic taste and knowledge are taxed to determine as far as possible from those portions of the general contour which remained undeformed, what must have been the natural form and expression previous to the occurrence of the deformity. And I assert that with a rational method of treatment, and all other things being equal, success in this difficult department of the art of dentistry will be in proportion to the artistic taste and judgement of the practitioner.

In cases of this kind I have been uniformly successful without recourse to the extraction of teeth, and I now proceed to give as briefly as I can, my method of treatment. I do not claim this method as entirely original with me, although I might claim to be the inventor of some of the details. I shall content myself how

ever with a mere description of the mode of practice which I have found the best, leaving it to the profession to judge how far I ought to be credited with any of its features.

In treating these cases, I begin with the upper jaw, and as the principles involved are the same for both the upper and lower jaws, the description of the process need not comprise the latter ; I first fit a rubber plate to the roof of the mouth in the usual manner, and insert in sockets formed upon the borders of this plate, pins of compressed hickory corresponding to each tooth which it is desired to assume a more outward position. As soon as these teeth have yielded to the pressure so that the pins are loosened I substitute for them others which renew the pressure until they have yielded as far as may be requisite.

While the above process is going on, I at the same time compel the teeth which stand too far out to fall into line, by the following means : In the centre of the rubber plate above described, are inserted small hooks of platinum. Over these hooks I loop a small rubber band, (the small elastic bands used for holding bundles of tickets, etc., together, and of which I keep a supply on hand, answer the purpose perfectly) and also loop it over the tooth whose position I wish to alter. These bands are the best things I have ever used for the purpose, their elasticity, and their softness being strong points in their favor. They can be renewed as often as required by the patient, and can be worn without any serious inconvenience.

By the means described the teeth are expanded or drawn in, until they stand as regular and even as desired. But at this stage of the treatment the axes of the teeth extended would all meet at the apex of a cone of which the cusps of the teeth form a portion of the perimeter of the base.

Occlusion between them and the lower teeth is only partial, or wholly obviated. How then shall the jaw be expanded so that the fangs shall be thrown out and the teeth be made to assume their normal relations? I have found no difficulty in accomplishing this by the following means.

I fit a new plate to the roof of the mouth, forming upon it artificial cusps corresponding to the teeth in the lower jaw ; upon these cusps the pressure of the lower jaw is received in the mastication of food, and more or less at all times and transmitted to the arch of the

plate. A general expansion of the bones and tissues is the result. The whole jaw is enlarged, and the work is complete.

I am aware that many will doubt that these simple means will accomplish so much, but let those that doubt, remember that the bony structures are plastic in their nature; especially so in youth; and that this plasticity if ever lost, is retained until late in life.

Let them make the experiment and convince themselves. It will require patient attention perhaps, for many weeks or months; much reasoning with over fond parents to keep the apparatus applied with sufficient constancy, to secure a good result; but with favorable conditions, the results need not be doubtful; nay, they may be as certainly relied upon as those of any other operation in modern dentistry.

I use rubber plate in preference to any other, because its effects upon the teeth are more harmless, and its rigidity is ample.

In conclusion I desire to urge upon the younger members of our profession a candid consideration of the value of art culture. Although in our own day but little may be accomplished, the time is coming when this department of our art will assume an importance little dreamed of by those who are content to tread in the old beaten path, and by whom any attempt at advancement, is regarded as an unwarrantable innovation.—*Med. Gazette.*

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### DISEASES OF THE JAW.

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By THOMAS WATERMAN, M. D., BOSTON.

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(Concluded from page 281.)

Under the microscope the disease presented a purely fibrous growth, without myeloid cells, distinguishing it from epulis, with which however, it was little likely to be confounded, neither the general aspect nor the mode of its growth bearing resemblance to the distinct masses and interdental origin of that affection.

The gross appearances of hypertrophied gums resemble the disease called lampas, occurring in the horse. The latter, however, is an *inflammation* of the gums, propagated to the bars of the roof of the mouth, and rising to a level with and even beyond the teeth. It usually subsides without treatment, or only requires slight scarifications.

IV.—*Tumor of the Lower Jaw from a misplaced Wisdom Tooth*

*Operation for its removal.*—A colored woman, æt. 41, ten years ago, noticed an enlargement of the lower jaw on the left side, near the angle, in the region usually occupied by the molar teeth. No permanent molars had ever appeared on that side, and it was the patient's conviction that there never had been any deciduous molars. The enlargement of the jaw was principally of the alveolar border, and this finally grew to such a degree as to prevent bringing the teeth together. Under these circumstances, five years ago a portion of the tumor, cartilaginous in density, was shaved off. A new growth gradually replaced what was removed, and there is now an enlargement of the entire bone, firm, dense, inelastic, slightly irregular in outline, sensitive on the inside to touch, whenever hard morsels are bitten upon. It is hardly of sufficient size to be visible from the outside, but can readily be felt, and it projects inwards about to the same extent. The jaw is perhaps double its natural thickness. For the last six months the tumor has been the centre of a radiating neuralgic pain constantly present, and so severe as to make the patient willing to undergo any operation likely to give her relief.

Removal of a portion of the continuity of the jaw being attended by disability and disfigurement, it was thought best to perform a temporizing operation, and excise so much of the tumor as could be from the inside of the mouth. In chiselling away the bone, which was dense and vascular, a well-formed wisdom tooth was found impacted in the jaw bone in a horizontal position. As this was deemed to have been the source of all the suffering as well as to constitute the tumor, no further steps were taken toward its more thorough extirpation. The operation was followed by complete disappearance of the pain. The wound rapidly granulated, and at the end of three weeks the patient was discharged at her own request.

The crown of the tooth removed was found to be enveloped by the membranous sac originally lined with enamel pulp, which having fulfilled its function had become detached from the surface of the enamel, and now remained as a capsular investment of that portion of the tooth. The sac thus formed was not distended with serous fluid into a "dentigerous cyst," as occasionally occurs, and an instance of which was reported in 1863,\* but retained its original proportions. The case must therefore be looked upon merely as one of impacted

\* Trans. Boston Soc. for Med. Improvement. Vol. V., p. 100

misplaced tooth, and the specimen is interesting from its deep-seated position, and as exhibiting the *pathogenesis* rather than the *pathology* of dentigerous cysts, in a manner all the more satisfactory from the rarity with which an opportunity is afforded for their study.

The subject of dentigerous cysts has been treated of at length by Mr. Salter.†

(The preceding cases of more than usual interest occurred in 1867, at the Massachusetts General Hospital.)

† Gty's Hosp. Reports, Vol. V., 3d Series, p. 319 and Holmes's Surgery, Vol IV., p. 32.

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## CORRESPONDENCE.

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### THE PROPOSED DENTAL COLLEGE.

*Mr. Editor,—*

In the March number of the Journal, casual allusion is made to the probability of establishing a Dental College in Ontario at an early date; and in a previous number we are told that a committee has been appointed from among the Board, to consider the advisability of the undertaking, and report at the next meeting of that corporation.

Now, as I have been consulted at different times by some of the leading members of the profession, in reference to the proposed enterprise, I propose offering a few suggestions, by way of *caution*, to the would-be promoters of such a hazardous undertaking.

When first advised by Dr. Scott, shortly after the passing of our dental "Act," that the Board contemplated organizing a college, I was led to concur with him and others, in the view, that some regular and legitimate course of instruction should be devised, in order to meet the demands of the younger members of the profession, upon whom the Act rendered it incumbent to pass an examination. But, since the Board have been pleased to recognize the *present* qualifications of the class of persons alluded to, and have granted licenses to all, or nearly all applicants, they have, by so doing, obviated the necessity of any further efforts towards establishing a dental school at the present time.

It can hardly be supposed that any great number of those who have *already* passed their examination, would avail themselves of the advantages of a college, even if it were practicable to establish one.

upon a respectable basis. As to the *future* wants of the profession, there is ample time to consider that yet. The demands of our Province are hardly so great, that we need go to *manufacturing* dentists wholesale, for some time to come.

From what I have seen of the management of the Baltimore College of Dental Surgery, whilst in attendance during the winters of '58, '59, '60, where the average attendance was about *eighty*, I should say that it was barely self-sustaining. Then what can we expect to accomplish, with hardly a pittance to provide and fit up a laboratory, an infirmary, and dissecting room ? three *indispensable* requisites to a respectable dental college. And then Toronto is not sufficiently large to provide the patients necessary to keep the students in practice, without infringing upon the business of the resident dentists, and reducing the prices of professional services to a ruinous degree.

I would advise the committee, previous to making their report, to make a tour of inspection through some of the American dental colleges of *good standing*, and I am satisfied that they would readily become convinced of the futility of attempting to organize a college in our midst for years yet to come.

H. H. NELLES.

## EDITORIAL.

### OSSEOUS UNION OF THE TEETH.



The accompanying cut represents a specimen of the osseous union of two teeth, sent to us by Mr. N. Pearson, of Newmarket, who says it was taken from the mouth of a healthy child about eight years of age, and gives the following history of its removal, viz: "The child was brought to my office, on the 3rd of April, last, by her father, who wished me to remove the right superior central permanent incisor, which was, owing to the great width of the right lateral, completely crowded out of its position ; with its palatine surface lying upon the central proximal surface of its fellow, and the labial surface looking to the right. After examination, I recommended the removal of the lateral, for obvious reasons, and proceeded to take it out. You can imagine my surprise and astonishment, when I saw both teeth come away together, and joined by an osseous union, with one nerve supplying both ; a strange part of the

matter is the father says that the deciduous teeth were joined in a similar manner." We are very much pleased at receiving the above specimen, as, during a practice of nearly twenty-five years, we have never met with anything similar. Such cases are very rare, but few ever having been mentioned by our best informed writers. We shall be happy to receive specimens of anything out of the common order of things, connected with dentistry, from our professional friends, and will publish a description of them provided that they will be of interest to the profession generally. We would be glad, too, if our friends would keep a record of difficult and peculiar operations, and from time to time, send us a description of them, that each, by giving his method of treating them to others, might be the means of increasing the common stock of dental knowledge. C. S. C.

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#### DR. NELLES' LETTER.

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In another page we publish a letter from Dr. Nelles, disapproving of the project of opening a Dental School next autumn. He states his reasons frankly for opposing it, and certainly they have a good deal of weight. It is to be hoped that the committee appointed by the Board to take the matter into consideration, will weigh all the arguments for and against the opening of a college, carefully, before the next meeting of the Board, as a false step at this time may be the cause of deep regrets in a few years. The columns of the *Journal* are open to all for a full and free discussion of the subject. C. S. C.

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#### CODE OF ETHICS.

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In the last No. of the *Journal* we remarked that a code of ethics is sadly needed by the Dental Profession in Ontario, and every day makes the necessity felt more and more.

In England the dentists have a very strict code, as has the medical profession. In Canada, the medical society have set us an example in this direction, well worthy of being copied. In the States, too, the national medical and dental societies, as well as the state and district societies, have each and all adopted codes more or less strict. In order that all the members of our association may know exactly what the profession in the States are doing, we publish the code of ethics which has been adopted by the American dental association,

and nearly all the lesser societies. We will also publish the codes adopted by the dentists of England, and by the medical societies of Canada, if any one will furnish us with copies.

It is quite probable that objections may be urged against some parts of the one we copy, but if not taken as a whole, it may form a text from which to draw up a code suited to the wants of this Province.

C. S. C.

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CODE OF DENTAL ETHICS, OF THE AMERICAN DENTAL ASSOCIATION.

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ARTICLE I

THE DUTIES OF THE PROFESSION TO THEIR PATIENTS.

SECTION. 1. The dentist should be ever ready to respond to the wants of his patrons, and should fully recognize obligations involved in the discharge of his duties towards them. As they are, in most cases, unable to correctly estimate the character of his operations, his own sense of right must guarantee faithfulness in their performance. His manner should be firm, yet kind and sympathizing, so as to gain the respect and confidence of his patients ; and even the simplest case committed to his care should receive that attention which is due to any operation performed on living, sensitive tissue.

SEC. 2. It is not to be expected that the patient will possess a very extended or a very accurate knowledge of professional matters. The dentist should make due allowance for this, patiently explaining many things which may seem quite clear to himself, thus endeavoring to educate the public mind so that it will properly appreciate the beneficent efforts of our profession. He should encourage no false hopes, by promising success where, in the nature of the case, there is uncertainty.

SEC. 3. The dentist should be temperate in all things, keeping both mind and body in the best possible health, that his patients may have the benefit of that clearness of judgement and skill which is their right.

ARTICLE II.

MAINTAINING PROFESSIONAL CHARACTER.

SECTION 1. A member of the dental profession is bound to maintain its honor, and to labor earnestly to extend its sphere of usefulness. He should avoid everything in language and conduct calculated to discredit or dishonor his profession, and should ever manifest a

due respect for his brethren. The young should show special respect to their seniors ; the aged special encouragement to their juniors.

SEC. 2. The person and office arrangement of the dentist should indicate that he is a gentleman ; and he should sustain a high-toned moral character.

SEC. 3. It is unprofessional to resort to public advertisements, cards, handbills, posters, or signs, calling attention to peculiar kinds of work, lowness of prices, special modes of operating, or to claim superiority over neighboring practitioners, to publish reports of cases, or certificates in the public prints, to go from house to house to solicit or to perform operations, to circulate or recommend nostrums, or to perform any other similar acts.

SEC. 4. When consulted by the patient of another practitioner, the dentist should guard against inquiries or hints disparaging to the family dentist, or calculated to weaken the patient's confidence in him, and if the interests of the patient will not be endangered thereby, the case should be temporarily treated, and referred back to the family dentist.

SEC. 5. When general rules shall have been adopted by members of the profession practising in the same localities, in relation to fees, it is unprofessional and dishonorable to depart from these rules, except when variation of circumstances requires it. And it is ever to be regarded as unprofessional to warrant operations or work as an inducement to patronage.

### ARTICLE III.

#### THE RELATIVE DUTIES OF DENTISTS AND PHYSICIANS.

Dental surgery is a specialty in medical science. Physicians and dentists should both bear this in mind. The dentist is professionally limited to diseases of the dental organs and the mouth. With these he should be more familiar than the general practitioner is expected to be ; and while he recognizes the superiority of the physician, in regard to disease of the general system, the latter is under equal obligations to respect his higher attainments in his specialty. Where this principle governs, there can be no conflict, or even diversity of professional interests.

### ARTICLE IV.

#### THE MUTUAL DUTIES OF THE PROFESSION AND THE PUBLIC.

Dentists are frequently witnesses, and at the same time the best judges, of the impositions perpetrated by quacks, and it is their duty

to enlighten and warn the public in regard to them. For this and many other benefits conferred by the competent and honorable dentists, the profession is entitled to the confidence and respect of the public, who should always discriminate in the favor of the true man of science and integrity, and against the empiric and imposter. The public has no right to tax the time and talents of the profession in examinations, prescriptions, or in any way, without proper remuneration.

## MISCELLANEOUS.

### A MONSTROSITY.

M. W. CAMPBELL, M. D., TROY, N. Y.

A married female of 28 years was taken in labor at full term, nothing unusual marked the course of the confinement, and the delivery took place in a few hours. On removing the infant from the bed, it seemed healthy and vigorous, but its arms were entirely wanting. On the right shoulder there existed a navel shaped depression, and on the left a protuberance about two inches long which contained no bony substance. The infant lived but a few days. I am not aware of the cause of its death. On inquiry into the cause of this phenomenon, the mother informed me that soon after becoming pregnant she met, and was strangely affected by a soldier who had undergone amputation of both arms at the shoulder.

This is one of those not very rare cases which seem exceptions to the general rule. Dr. William Hunter, of London, when connected with the Lying-in Hospital made notes of the fears and expectations of 2,000 pregnant women as to the manner in which their offspring would be marked; and he declares that in none of the 2,000 did he meet with a coincidence. Still we cannot doubt that the form of the embryo is at times influenced by the nervous condition of the mother. *American Homœopathic Observer.*

EXAMINATION OF PORK.—Tiemann, Conservator of the Zoological Museum at Breslau, recommends the thorough examination of a single bit of muscle, taken from the diaphragm or psoas major of the slaughtered swine. He uses a lens that magnifies only ten diameters; saying that the trichina is much more likely to be overlooked when a higher power is used.—*Allg. Wiener Med. Ztg.*, No. 8.

A NEW PARASITIC AFFECTION OF THE LINGUAL NERVOUS MEMBRANE.—At a meeting of the *Societe Medicale des Hopitaux*, M. Raynaud read a note upon a new parasitic affection of the lingual nervous membrane. The affection is entirely local, and is not a serious one. M. Raynaud has met with it twice, and has found it characterized by an alteration of the epithelium of the lingual papillæ, and by the presence of a vegetable parasite consisting entirely of spores. The spores resemble those of the *Tricophyton* of Herpes circinatus, &c.—*Boston Medical and Surgical Journal*.

CARBOLIC ACID AND HOSPITAL MORTALITY.—M. D., in London *Medical Times and Gazette*, says:—"In answer to your correspondent who inquires as to the effect of carbolic acid on the statistics of Hospital mortality, I would beg to refer him to the annual reports of the Glasgow Royal Infirmary, the last of which, for 1868, has just been published. If he will take the trouble to calculate the mortality from the primary and secondary amputations of the thigh, leg, arm, and forearm before and after the introduction of carbolic acid into that Hospital, he will find that the results are not in favor of the so-called antiseptic plan of treatment. In the years 1860, 1861, and 1862—before the introduction of carbolic acid—I find 126 of the amputations I have mentioned recorded. Of these 126 there died 41, which gives a mortality of 1 in 3. On the other hand, in the years 1867 and 1868—or since carbolic acid has been used so extensively in that Hospital—there were 73 amputations of the same kind. Of these 30 died, giving a mortality of 1 in  $2\frac{1}{2}$ .

The results are even more unsatisfactory if we take the compound fractures, which are the cases reported to be the most benefited by the carbolic acid treatment. I find in the three years already mentioned that there were 114 compound fractures treated in the Infirmary, of which 26 died, or nearly 1 in  $4\frac{1}{2}$ . In 1868—a year in which, as I have been told, all the surgeons to the Hospital used carbolic acid—there were 59 compound fractures treated with a mortality of 20, or more than 1 in 3. Your correspondent may digest these data at his leisure."—*Ibid*.

CLEANING FILES.—James F. Smith states, in the *Scientific American* "that he has tried a very effective way of cleaning files filled with work, by simply holding them in a jet of steam under forty pounds pressure. In one minute the files come out 'as good as new.'

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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A FEW MORE HINTS ON EXTRACTING.

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BY W. G. BEERS, MONTREAL.

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We should have said in the January number, that we are particular in lancing the gum around both upper and lower wisdom teeth, especially at the farthest extremity, near the tuberosity of the palate bones. We will endeavor to give reasons for this preliminary, and a few final hints on extracting.

What is the danger of not severing the connection of the gum with the wisdom teeth? When the teeth are remarkably small, as wisdom teeth sometimes are, or when the gum has receded from the necks to a considerable extent, no danger may be apprehended, as in both cases, the teeth have but little hold in the jaw; but when they are of the ordinary size, and firm in their sockets there is danger of tearing away much of the adjacent membrane, and especially, a part of the duplicature of the mucous membrane at the posterior edge of the palate bones. At the wisdom teeth, the alveolar processes terminate, and the gums are continuous with fleshy folds of muscle and mucous membrane. The liability to fracture of the process or maxillary is lessened at this point, owing to the smallness of the dens sapientiæ roots and the thickness of the bone; but when we consider the usually firm attachment of the gums to the periosteum of the

alveolar process of any of the teeth, and the laceration which sometimes occurs, even in cases where the lancet has been employed, it is clear that the wisdom teeth being more clasped by gum than any other, owing to their anatomical situation, are most exposed to the accident of which we write.

In the lower jaw, broad and fleshy muscles, continuous with the gum, arise at the side of the wisdom teeth ; and the mucous membrane here is much exposed to laceration. We cannot enlarge further upon this subject, but will give a case in our practice. We had to extract a left upper wisdom tooth for a lady. She objected to lancing, but we succeeded in separating the gum on the buccal sides. The forceps was applied ; patient perfectly quiet, and the tooth was removed from its sockets, but judge of our surprise to find that though the tooth was out, and the entire roots exposed to view to their very end, that the attachment of the gum was so strong at the posterior side, which we had not lanced, that when the tooth was drawn downwards the mucous membrane covering the posterior edge, and even part of the floor of the palate bones was clearly loosened, and seemed inclined to come away with the tooth. The case was interesting, and before cutting away the gum, which had to be done before the tooth could be safely removed, we assured ourself of one fact, and that was, that the extraction of the tooth would necessarily lacerate a wide surface of membrane of the palate, unless the attachment was severed. This was only one of several cases in our own practice, and we have no doubt but that it is parallel to cases in the practice of others.

Any thick accumulation of tartar should be removed with a scaler before attempting to extract. Such a deposit may conceal a cavity into which the point of the forceps might crush, and fracture the crown of the tooth : at any time, however, tartar is in the way of the application of the instrument.

If in the administration of an anæsthetic, a cork is placed between the teeth to keep the jaws open, it is advisable to tie a strong string to it, in case it should slip down the patient's throat during inhalation. A patient swallowed a cork some years ago, while inhaling chloroform in a dentists office, and died before it could be extracted.

We were more than ever struck with the value of stiffly starched towels for chloroform, during a recent operation, in which Dr. Reddy

of Montreal, proved to our satisfaction, that by their use, less chloroform is required, and quicker anæsthesia obtained.

The eye should follow the removal of a tooth, from the application of the forceps to extraction, and the end had in view from the beginning. A volume might be written on the position of the operator and the proper application of instruments. Indeed this important part of dental surgery offers a large field for improvement, and study, especially in the adaptation of instruments, and the relief to be afforded in the pain of the operation.

One last word. As surgeons do we not lack thoroughness, when occasion offers in our operation of extracting under an anæsthetic, when we only remove the teeth? Of what further use in the economy are much of the outer and inner plates, and the transverse septa of the alveolar processes? Why not assist Dame Nature by going over the entire maxillary after the teeth are out, with cutting forceps and removing much of the processes? There is little or no pain in this operation if it is done before the gums close.

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### INFLAMMATION.

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BY W. C. BARRETT, DENTIST, WARSAW, N. Y.

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Inflammation is the first stage in nature's great reparative process. It is not a morbidity of itself, although it is an indication of a morbid pathological condition. Whenever there is any functional derangement, nature always attempts a cure. It is the province of the physician to do what he can to assist, for it matters not how judiciously he may select his remedies, they can only be the instruments with which nature may work a cure.

Especially is it important that the dentist should understand all forms of inflammation, for it is only by knowing when to excite, and when to allay its action, that he can in many cases, tell how a cure may be effected. It is one of the most common, and frequently met with, of all cases that require the care of the dentist. At the same time, its study is one of the most complex and difficult upon which the student can enter.

While inflammation is a part of the process of recuperation, unless its progress be stayed at the reparative stage, it becomes one of the most dangerous of diseases. A great majority of all the ills to which

flesh is heir, have their origin in, are accompanied by, or end in inflammation. Its study is one that is equally interesting, whether regarded in its healing tendencies, or its morbid condition. It is by inflammation that foreign substances are removed from the body; that wounds are closed; that ulceration is healed. The importance of a thorough knowledge of its conditions therefore, cannot be overrated.

The word inflammation we derive from the Latin *inflammatio*, which signifies a flame, a burning, and chemistry teaches us that there is, in a philosophical sense, an actual and excessive combustion going on in the part inflamed.

The symptoms of inflammation, when the part effected is external, are too well known for any extended remark. They are an alteration in size, color, temperature, and functional action of the parts effected. These conditions may all occur simultaneously, or only one or two of them may be visible. But where some organ beyond the range of vision is affected, its diagnosis is more difficult. Pain is one of the usual concomitants of such inflammation. It serves a useful purpose, by preventing the use of the affected part; yet it is well to remember, that the pain is not always located in the affected part. For instance, in some cases of Ophthalmia, the pain is felt along the fifth pair of nerves, and in the teeth, in consequence of the intimate connection of the nerves. So too, the pain accompanying inflammation of the pulp of a tooth, may be felt at some distance from the organ affected. Yet the careful dental student will find little difficulty in diagnosing inflammation of any of the dental organs.

Local inflammation may cause constitutional derangement. Febrile symptoms very frequently accompany. The tongue is coated, the skin becomes hot and dry, the pulse quick, hard, and full, the secretions arrested or diminished, and the patient is tormented with the thirst of Tantalus. Such symptoms require constitutional treatment.

The cause of inflammation may be either local, or predisposing. If local the first thing will be the removal of the irritating cause. If predisposing the treatment will be more complicated. Inflammation may terminate by Resolution, or by Metastasis.

The termination by Resolution, means a return of the affected part to health. The irritating cause having been removed, the pain lessens, the swelling subsides, the redness fades out, and the disordered organs resume their wonted functions. With regard to the internal

relations, the dilated blood vessels contract, the blood discs that had been dammed back and stagnated in the affected part, are loaded with the effete matter and pushed on, absorption which had before been dormant steps in and removes the *debris* and extravasated matters, and secretion helps to build up the waste places.

The termination by Metastasis is simply a change of location. Inflammation driven away from one point, seizes another. To induce this change we sometimes apply counter-irritants, that the inflammation may leave the proximity of vital organs, and locate itself upon the surface where we can thus more readily control it.

Failing to terminate in either of these ways, inflammation passes by regular gradation from the primary or simple condition of the disease, to some other form.

When lymph is thrown out, it has reached the adhesive stage.

When pus is secreted, we have suppurative inflammation.

When an ulcer is formed, it is called ulcerative inflammation.

When the part affected dies entirely, and commences rapid disintegration, the gangrenous inflammatory stage has been reached.

Inflammation may spread to other tissues, by proximity or contiguity, by metastasis, or it may be carried by the blood, thus causing numerous centres of inflammation. Necrosis is frequently the effect of inflammation of the periodontal membrane.

The treatment of inflammation may be either preventive, or curative. The preventive treatment may consist in the removal of all irritating or predisposing causes and the application of cold.

But to leave generalizing on one subject, and come to those matters more nearly connected with the dentist's speciality. We frequently find after filling a tooth, that from the concussion of the instruments used in filling, or from an undue pressure upon a thin layer of dentine intervening between the filling and the pulp, or for some other sufficient reason, inflammation of the pulp has supervened. If this be not checked, it will, from contiguity of parts proceed from the pulp chamber along the nerve to the periosteum, and will pass through its various forms of adhesive and suppurative, till it reaches the ulcerative stage. An opening for the discharge of pus will be formed, and there will be an extensive breaking down and disintegration of tissue. It will perhaps, spread to the osseous tissue, and we shall have necrosis with extensive sloughing.

The first symptoms of inflammation of the pulp will be a sensation of uneasiness and pressure, which soon becomes a severe pain, of a throbbing paroxysmal character. It is frequently worse on assuming a recumbent position, or on muscular exertion. There is an increased vascular action, attended sometimes by redness and swelling of the gums. Thermal changes, if not too violent, frequently give momentary relief.

When such disturbances are caused by the filling in a tooth, the surest thing for its cure is the removal of the filling. But if this be deemed not advisable, cooling washes should be applied, the gums might be scarified, and an antiphlogistics treatment commenced. Local applications however, are less beneficial, from the fact that there are peculiar difficulties to encounter. The walls of the tooth, surrounding the pulp, are hard and unyielding; the pulp in its normal state fills its chamber; when therefore it becomes inflamed and swollen, it presses upon the walls of the cavity and the irritation is thereby increased, exacerbating the inflammation. The influence of local application must be either felt through the bony substance of the tooth, or it must be taken up by absorbents, carried into the system, mingled with the blood, and so sent to the place where it is needed. I prefer to give remedies internally, as the shortest route to the scene of action. I have prescribed arnica with very good, but not with uniform results. The course of treatment, will however, depend very much upon the predisposition of the dentist in favor of certain remedies, or schools of medical practice.

If the inflammation be not stayed at this point, it attacks the periosteum. The symptoms accompanying this will be an increased soreness and irritability. The tooth seems to be in the way, is elongated, and strikes too soon in occlusion of the jaws. The pain becomes more constant, and has more of a gnawing sensation. There will also be signs of greater external inflammation, the membranes surrounding the tooth, and lining the socket, are thickened, and being serous, there is also doubtless an effusion of serum.

I have found that in this condition the symptoms will almost invariably yield to mercurius vivus. I use about the third decimal trituration, in doses of from  $\frac{1}{4}$  to  $\frac{1}{2}$  a grain every hour; if the pain be very violent, I would rather diminish the intervals than increase the doses. If the attack be not more than ordinarily severe, once in two

hours will be frequent enough. Dr. Chase, of St. Louis, recommends larger doses with longer intervals. I can only say I have observed the best effects from the smaller doses given more frequently. At the same time I keep up the application of cooling washes. It is well for the practitioner to remember, however, that cold is efficacious only in the earlier stages of inflammation; it is a positive injury in later developements. But my main dependence is mercurius. I do not mean that I never give anything else, but that this is of more general utility, and covers more forms of the disease than any other remedy that I know. I might relate many cases in my own practice, successfully treated in this manner, some of which had nearly reached the suppurative stage—I will relate but two.

A. B., aged 22, had a number of cavities bunglingly filled, and inflammation of the periosteum of several of the anterior teeth supervened. When I first saw the patient he was confined to his bed, not having had any sleep for two days from the intense pain and suffering, which was accompanied with much fever. The febrile symptoms readily yielded to tinct. aconitum, but the teeth were quite loose, intensely sensitive to the touch, with all the adjacent tissues highly inflamed. I gave mercurius every hour, with an anodyne wash. The patient soon slept, the pain having subsided, and passed an easy night. The next morning I increased the interval between the doses and continued them through the day. The case steadily progressed to a cure.

Case 2. I filled for C. D., aged 40, an inferior bicuspid, posterior approximal cavity. The excavator left but a thin stratum of dentine covering the pulp. I should perhaps, have introduced some non-conductor to preserve the pulp from thermal changes, but did not. Intense periostitis supervened, I prescribed mercurius as before, directing the gums to be bathed in ether fort. containing a few drops of tinct. myrrh. The pain readily yielded, the inflammation subsided, and the tooth became serviceable.

In my next article I shall speak of suppurative and ulcerative inflammation.

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## PROCEEDINGS OF SOCIETIES.

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### DENTAL ASSOCIATION OF WESTERN NEW YORK.

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Second day, Wednesday, 4th of May, 1869.

~~In accordance with the announcement of yesterday, most of the~~

members met at the office of Dr. L. D. Walter, to witness the clinical operations by Drs. Fowler and Chittenden, which occupied the time till sometime past the hour to which the Association adjourned.

At 11 o'clock, the Association was called to order by the President, who announced the next subject in order for discussion to be "Improvements in Operative Dentistry. Dr. J. L. Requa, Essayist."

Dr. Requa then read the following essay :

MR. PRESIDENT AND GENTLEMEN,

The field before the professional dentist for doing good to his fellow man is broad. To him who makes the best interests of his patients his study, the preservation of the natural teeth must be his highest aim. The truth is constantly held up before him that his best efforts in art are but poor substitutes for the natural organs, and it is not mainly so with the inferior class of the profession but it is a fact that the higher a man stands in its ranks, and the greater his attainments in science and art, the plainer this truth appears to him, and the greater his efforts to put off the evil day of artificial teeth, and to preserve to his patients the usefulness and comfort of the natural ones. Persevering study to accomplish this has resulted within a few past years in improved materials, and methods of operating, and many improvements in instruments and appliances, to be found within arms length of the operating chair. It is not the province of this paper to detail the merits of all these improvements, nor can it be presumed that I am able to do so.

It is for the discussion of this subject that we have met here to-day, and if each one will speak of what he knows, we may all learn something. Let each one have something to say, if it is nothing more than to ask a question or tell us of some failure, for it is possible for us to learn from others faults.

The time has passed when as one dentist met another, "No Admittance" was posted over his laboratory door, and even over his mouth as plain as actions could speak. We have found that by being sociable nothing is lost, and always something gained by a liberal exchange of ideas.

Very little improvement has been made in material for filling teeth except that of the coarser kind. Pure gold foil which has never had a successful rival, is about the same to-day that it was twenty-five or fifty years ago. To try to improve it would be like gilding refined

gold. Some of it comes to us at present, annealed, which renders it more adhesive, but that quality as we buy it, is of little importance since the invention of the annealing lamp. Crystal Gold is claimed by some, to be an improvement, but its merits are very questionable. My own experience with it is such that after having used it almost exclusively for more than a year I abandoned its use altogether.

Plugging instruments with serrated points, have crowded the old fashioned smooth ended (not pointed) ones from our table, and beside them is the knife edged slab of Arkansas stone to keep their points as sharp as needles.

The mallet, since it lost its occupation in the laboratory in swedging gold plates, has made itself useful at the chair in condensing gold fillings. Good fillings can be made by hand pressure, but it is beyond question that in most cases, they can be made more solid and durable by an expert use of the mallet.

With the use of adhesive or annealed gold, a radical change has taken place in the preparation of cavities. In the old system of *stuffing* teeth with non-adhesive gold, all that was desired was shelving sides or ends, which were sufficient retaining points, and after stuffing to completion and burnishing, made very good fillings, infinitely superior to some more dense but insecure fillings of the present day. With annealed gold we must either do *very* well or *very* badly. To do well, the foundations must be laid firmly, and solidly, and each successive piece of gold introduced as though it were a whole and not a part, until a complete "thing of beauty," and a joy for years, is produced.

One of the most prominent improvements in operative dentistry is in the treatment of that class of teeth where it has been necessary to destroy the nerve, or where it has died from exposure. The old fashioned method of sewerage was to fill the cavity of decay and then drill through the neck of the tooth to the pulp cavity for the escape of the constantly accumulating and offensive fluids and gases into the mouth. We now, after extirpating the nerve and thoroughly cleansing its canal, fill the fang as nearly as possible to the foramen with gold, thus avoiding the exciting cause of alveolar abscess, and under favourable circumstances even curing it where it has existed for years.

I might occupy much time in the rehearsal of improvements of

this kind but thanks to dental associations and dental literature you are so familiar with them, that it would scarcely be profitable to you for me to do so. It is not alone to improved instruments that we are indebted for the excellence of operations of the present day. There is a desire to excel, stimulated by dental association that has done much towards it, there is thoroughness to our work which produces results beyond what we knew of a few years ago, but, do not let us think that we have attained perfection, and that there is nothing more to learn. Let us attend the meetings of our Association, and study to improve, and whatever we do let us know that it is well done, and try to do better than before, and we will improve.

Dr. Daboll said that he never uses soft foil in filling teeth ; thinks that a *perfect* filling can be made by commencing the filling with Morgan's plastic gold, and finishing with adhesive foil ; thinks that the plastic gold, can, by its adaptability to even the slightest irregularity of the cavity, be so fixed in its position, as to be retained in the tooth, even after portions of the tooth have been broken away ; does not believe it possible to make as good a filling with cylinders, or soft gold in any form, as with Morgan's plastic and adhesive foil ; thinks the rubber dam very useful for keeping the mouth dry while filling, when it can be applied, but prefers the duct buttons and duct compressors in most cases.

Dr. French uses adhesive foil, but cannot, like Dr. Daboll, entirely condemn soft foil ; as he has seen many teeth filled with it, that have been perfectly preserved for a great number of years, and is of the opinion that we have made a mistake in abandoning its use to the extent that most of us have done. He candidly believes that there have been more bad fillings put in within the last few years, since the improvements have been made in operative instruments, than during the same length of time at any previous period. The *comparative* ease with which fillings can be made now, with the new instruments, has made most of us careless. He thinks, what most of us call soft foil, does not retain its adhesive property, to the same extent, when heated, that the gold which we call adhesive does ; our patients almost always appreciate good operations, and therefore, it is the duty of the dentist to make them as perfect as possible.

Dr. Daboll said that *pure* gold possesses the property of adhesiveness ; so much is this the case, that when a sheet of *pure* gold foil is

laid on to another, they will adhere to one another, or will become welded together so that they cannot be separated, if a moderate pressure, or concussion, is made upon them.

Dr. French wished to know, why some gold becomes hard, when annealed, and why some foils were so much more adhesive than others.

Dr. Whitney said that the gold beaters keep us in the dark on this subject, one beater giving one reason, and another another. One foil beater had assured him that the adhesiveness of foil was brought out by the degree to which the gold was heated, during the process of beating, and he, Dr. Whitney, thought that this theory was the correct one, for we find if we take the most adhesive foil and expose it to the atmosphere for a few hours, that it loses its adhesiveness ; and that the adhesiveness will be restored if the foil is heated again. He thought foil should be heated to so high a temperature that, on introducing it into the mouth, the moisture from the breath would not condense upon it, and that the annealing lamp was an indispensable article on every dentist's operating table. Foil should be handled as little as possible with the fingers, as no matter how carefully you wipe your fingers, there will always be more or less moisture left on the surface of the gold from the perspiration, which may easily be detected by heating it.

Dr. Barrett uses a little of Morgan's plastic gold, to commence his fillings with, in almost every instance, and condenses as thoroughly as if he were using foil, but does not think that any of the plastic golds should ever be used on the surface of the filling, no matter how well and thoroughly they may be condensed ; cannot use Morgan's gold at as high a temperature as foil, because a high heat makes it become hard and brittle ; his object in annealing gold, is first, to drive off any moisture that may have collected on the surface of the gold, and secondly and chiefly, to change the polarity of the particles of the gold. He thought that this might be demonstrated to the satisfaction of any one, by the examination of a piece of foil under a microscope before and after heating it. The heating seemed to change the position of the particles of the gold, in relation to each other. The jarring motion produced a change in the particles of iron in car wheels. He thinks that heat changes the position of the particles more in sponge gold than in foil.

Dr. Daboll said if Morgan's gold is allowed to remain perfectly still while being annealed, the polarity of the particles will be changed, without its becoming hard and brittle. It is the shaking and jarring during the annealing, or the moving of the gold about that hardens it. Dr. Cook said he formerly used sponge gold to a great extent in his practice, but has nearly abandoned its use now; there are cases, however, in which he prefers it to any other form of gold. He thinks it requires a longer time to make a good filling with it than with foil in the form of cylinders, and cannot understand why dentists repudiate soft foil when they see, every day, good soft foil fillings of twenty or thirty years standing.

Second day. Afternoon Session.

The President stated that there were several members of the Association who were living in open violation of the rules of the code of ethics, and he thought a committee should be appointed to make inquiries as to the facts of the case, and report at the next meeting.

Dr. Whitney thought the subject ought to be deferred to the discussions under the head of miscellaneous business.

The next subject for discussion, "Mechanical Dentistry," was opened by an essay by Dr. Straight, of Buffalo.

Dr. Whitney said that it was unfortunate that every member of the profession was not willing to make known whatever knowledge he possessed, relating to mechanical dentistry. He considered the patenting of new inventions, or discoveries to be wrong, all wrong. We are not mere mechanics, but professional gentlemen, and should divulge all we know, for the benefit of the whole profession, instead of covering it up with a patent.

Dr. Bristol had no objection to any man's obtaining a patent for anything that was really new; but he did most seriously object to the patenting of old things. Several patents had been obtained for methods of practice which had been in use for many years.

Dr. Barrett said that he was in the habit of purchasing everything that was new, and very frequently found that his purchases were valueless; still if any dentist wished to know what the latest new thing was, he should go to him as he could never refuse to buy every novelty. He described, in speaking of the Folsom patent, a case in which he had been unable to put up a set of teeth that was satisfactory to himself or the patient, for which he put up a plate after the Folsom patent, which answered the purpose perfectly.

Dr. Coleman said he was rather forced into purchasing the Folsom patent.

A desultory conversation followed, in which most of the members took part. The discussions on mechanical dentistry were not taken up with the same zest as in the preceding subjects, there being a good deal of feeling on the subject of dental patents.

Dr. B. T. Whitney, of Buffalo, was called upon for an essay on "Diseases of the Gums." The Doctor excused himself on the ground of sickness, but made a brief address on the subject, giving some very interesting accounts of cases that came under his notice, and his mode of practice.

The following named gentlemen were selected as essayists for the next meeting, to be held on the first Tuesday in October ;

Dr. W. C. Barrett—subject "Gold for Dental purposes and its Preparations."

Dr. Coleman—"Secondary Syphilis, its Effect upon the Teeth and Bones."

Dr. B. T. Whitney—"Anæsthesia, its Effect upon the Blood."

Dr. L. D. Walter—"Continuous Gum Work."

Dr. G. C. Daboll—"Filling Over Exposed Pulp—How to do it successfully."

Buffalo was chosen as the place to hold the next semi-annual meeting.

On motion of Dr. Whitney, the Western New York Dental Association was declared adjourned *sine die*.

It is proposed now to have the seventh and eighth judicial districts convene semi-annually, either in one or the other of the two districts, say in Buffalo or Rochester, which will answer the same purpose as the W. N. Y. D. A., and save the time and expense of attending the extra Convention.

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## NOTES FROM PROCEEDINGS OF THE OHIO STATE DENTAL SOCIETY.

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### STOPPING THE FLOW OF SALIVA WHILE FILLING.

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DR. SPELLMAN : I am constantly using the rubber dam, but it is often very annoying. Sometimes I am on the eve of giving it up, because it slips off when I get it placed. When the rubber dam is properly adjusted, you can draw the mouth up as you wish, and go into the reception

room and chat with patients, though the filling is not completed. When properly put on, it is impossible for the water to pass between that and the tooth. In filling the inferior teeth I regard it as an indispensable article. When operating on a bicuspid, I very often, in order to succeed with the rubber dam, place it over three teeth and operate on the middle one. It is almost utterly impossible to put the rubber over the inferior cuspid in such a way as that the water will not leak through. In such cases, I always have, cut up in readiness, pieces of spunk, and if it leaks, and they become wet, I change them as Dr. Butler changes his napkins. You will see at once, when the spunk is saturated and should be changed. With regard to the inferior incisors, it is very difficult to apply the rubber dam, yet it can be done by taking a piece of silver wire, or if you have not that, very small wrapping wire, and bringing it forward, hold it with a blunt instrument and crowd it below the crown of the tooth, then pass your rubber down as near the wire as possible, then slipping the silk over this twice after, and with a fine instrument, slip the edge of it over that wire. It is so liable to slip up, but with this wire it can be held down. So far as the upper teeth are concerned, I use it a great deal, though I don't regard it as indispensable any where except for the inferior teeth.

In filling the superior bicuspid, the wedge is my dependance. But we find that the gums seem to secrete a kind of watery mucus that is not naturally a product of the salivary glands, and when engaged in an operation of filling, you will discover its becoming moist. This spunk, if pressed into the interstices between the teeth in such cases, will always show you when it is time to change it. When there is danger of water, I never fill approximal cavities, or attempt to do it, without pressing into the interstices between the teeth pieces of spunk in this way, and if the wedge passes far enough above the base of the cavity so as to put a very thin piece of spunk in, I prefer it, for, although you dry it off the wood well, the water will work through it, and the first pellets will become a little dampened. I would rather have every point clean and dry, for when you come to filling the upper margin, you cannot polish or finish off with so nice and smooth a surface as if it had not got wet or dampened by contact with the wood. I use bibulous paper where Dr. Butler uses napkins.

I don't know whether it is better or as good. [A member, "It is good, though expensive."] I use it because I thought it was not so expensive. A quire of this paper will last a good while. It is rather a delicate tissue paper, and not so rough to the mouth as supposed. It will contain a great deal of water. Formerly, in using it, I took and folded it closely, one layer over another, folding it compactly and rendering it hard, supposing that the more I got in the more water it would contain. The paper is capable of great expansion, and will contain water in proportion as you allow it to expand. Afterwards, I found that half the amount of paper would hold as much water, and folded more loosely, it was not so harsh or offensive to the soft velvet-like tissue it is laid upon.

Dr. BUFFETT : I can not tell you how to control the flow of saliva. I can tell how I attempt to do it. I confess I have not received very much benefit from the rubber dam. It has been a failure in my hands to a great extent. I use the holder sometimes for holding the cheek back, and in cases which I consider difficult, as the inferior teeth, sometimes have the strap to pass around the neck and head and held by the patient. That I consider an indispensable appliance, and on the inferior teeth I depend almost entirely on napkins, and occasionally on the tongue-holder. Instead of the napkin I use linen cloth, called diaper, containing considerable starch, so as to contain a certain amount of stiffness ; if it is washed it is sometimes too flimsy. I cut it into pieces from an inch to four inches square. Placing these small pieces and pressing them under the tongue, and the large napkin under the end folded in a strip. You can change either the larger or smaller napkins as many times as you wish.

The fewer things we put in the mouth the better we can operate, and with more ease to ourselves and patients. It depends a great deal on the firmness, as you may say, of the operator. If you determine to control the flow of saliva, and let the patient understand what you intend, you will be more likely to succeed. But if you go at it indifferently and undecided, your patient will think there is going to be a great deal of trouble, and they will get excited, so that you can not make a good operation. Even if I think there is danger I don't tell them. If I fail I try again.

Dr. HERRIOTT said he tried to control the condition of the patient. He applied something to the teeth after they were excavated, applied

white wax and sealed up the cavity, and delayed the filling a day or two. Had this engagement arranged beforehand, then, when the patient returned, there was no excited condition of the patient, as immediately after the excavation of the teeth, when the flow of saliva would be greater than if the patient had been quiet for a day or two.

Dr. N. W. WILLIAMS, for the last few weeks, had been using the new duct compressor—Smith's—the part that passes under the chin has a lateral motion, also that which passes inside. His way of using it is, to cut out a piece of spunk something in the shape of a half moon and place on the ducts, and then a small napkin laid round inside of the teeth under the tongue, placing the duct compressor on that, and pressing down as tightly as it would admit of without irritating the muscles. He had succeeded better in controlling the flow of saliva with that apparatus than anything he has tried before.

Before he got that, he had succeeded pretty well by the use of the napkin and spunk. He had, by directing the patient to crook the finger and place the napkin in the mouth and hold it, succeeded in cases where he had failed before.

He thought spunk controlled the flow of saliva better even than the use of napkins, for, as Dr. Spellman says, we can, by using it, generally tell when there is approaching danger. He had often succeeded by having a piece of spunk near at hand and applying it. But by applying the spunk under the tongue over the saliva ducts he had found particular advantage.

#### TAKING IMPRESSIONS

DR. SPELLMAN: The experience of every one present will bear me witness that a ring upon a finger at some times, in some conditions of the flesh or tissue, is such that it will slip off easily, and at other times it can hardly be removed. Now, what is the difference? Cold shrinks or diminishes animal tissue, and heat expands it. When you put into the mouth the plaster of Paris, the very moment that same result commences to take place, heat is evolved that acts upon the membrane of the mouth and expands it. You get an impression of the mouth that is not an exact counterpart of what the mouth was before you put the plaster into it. It is very true that it is with great difficulty that you can remove that impression, and a great many argue that the impression must be a good one, because it adheres so tightly to the mouth, and is removed with great difficulty. This

is not the reason why it adheres with such tenacity. It is because the soft tissues were expanded by the heat of the plaster, making a perfect adaptation of the surfaces of the one with the other, and you get the pressure of the atmosphere of fifteen pounds to the square inch. Negatively, that enlarging the tissues here crowds the plaster, or compresses it, and the result is that you have not a perfect impression of the mouth. My plan to overcome this difficulty is this: I take a tumbler of ice water and give it to my patient, and tell the patient to hold it in the mouth until it gets benumbed and chilled, and while this is being done I go into the laboratory and prepare my impression cup, which had been previously prepared somewhat with reference to that mouth. I prepare the plaster in no hurry, letting the patient take the icy water, and when it is warm, throwing it into the spittoon and filling the mouth again. I then put in my plaster and I get, as every one present will admit, a smaller impression than if taken with the mouth in its normal condition. I succeed much better in that way, and have made sets of teeth that the patients could not remove from the mouth, and after they had worn them three or four days, came to my office, claiming that I had cheated them by putting teeth in that were not intended to be removed. Another method I resort to sometimes to overcome that expansion in the mouth is this—let me, however, go back a little before I give it. A professor in Philadelphia has published a treatise upon the manipulation of rubber. He tells you that you should not varnish the plaster impression, but that you should coat it over with a thin coat of soap or soapy water, where the soap has dissolved with some little consistence; then put in your plaster, and claims that you get a cast more firm, and a better impression. I admit that it is so, but deny that it is necessary. I take the cast or impression and give it, if time, two or three coats of gum shellac, taking care to apply it evenly, with a view of shrinking the cast I get from that impression, and making it smaller.—*Dental Register*.

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PROCEEDINGS OF THE ODONTOGRAPHIC SOCIETY  
OF PENNSYLVANIA.

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BY THOS. C. STELLWAGEN, M.D., D.D.S., PHILADELPHIA.

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The regular monthly meeting was held in the Philadelphia Dental

College, No. 108 North Tenth Street, Wednesday, April 7th, 1869, the President in the Chair.

A letter from Dr. B. F. Arrington, of Wilmington, N. C., was read, and, upon motion, was ordered to be entered upon the minutes. The following is a synopsis :

"I have recorded a case of practice, which to me has been very interesting and instructive. \* \* \* If you deem it of sufficient interest, you can relate it at the next meeting of the Odontographic Society. The case was new to me, and was treated experimentally.

"Ten years ago, September past, I was requested to call upon a lady residing in the country, and in too feeble health to visit my office ; was recovering from a long-protracted case of typhoid fever, and ill effects following. Nearly eight months had elapsed since she was first attacked with the fever, which confined her to her bed nearly two months. Health, prior to this illness, always excellent from childhood ; dental structures well developed and perfect in quality. The object for desiring my presence was to consult me relative to the removal of all the teeth, and the insertion of artificial substitutes. The disease and medical treatment had, to all appearances, played havoc with these organs ; they were all very dark in color, and defective in texture. Acids had been administered freely, without caution as to injurious effects. \* \* \* After having advised the retention and treatment of the teeth, \* \* \* the question arose with me how to treat, what for, what with, etc.

"My first idea was to improve the appearance with stick and pumice, or silex, not having tested thoroughly the true condition of the enamel. I commenced the operation of polishing in the ordinary way, but was very soon disgusted with the slow progress and want of success.

"After a more careful diagnosis, I found almost the entire enamel in a softened, chalk-like state, and some of the teeth (7 or 8) were sensitive to the touch." \* \* \* Finally concluded to experiment with some of the superior incisors. \* \* \* After separating with a thin, sharp file, followed with fine grades, much worn, then tape, pumice, silex, and finished with burnishers. The outer and inner walls I pared off with cone-shaped chisels and excavators, using them freely, so long as any soft portion of the enamel remained, and

smoothed as before. The superior cuspidati were very painful when instruments were applied, but this was easily relieved by the application of nitrate of silver (stick).

"The experiment proved a success and gave encouragement to both patient and operator. \* \* \* I proceeded, at intervals, for three days, dressing as at first; the lunar caustic never failed to give relief, and time has proved that it did no injury.

"The walls and portions of the grinding surfaces of some of the bicuspidi and molars were seriously effected; these, in addition to the process before described, I brushed with the polishing materials.

"Advised equal portions of pulverized silex and prepared chalk to be used freely for four or six weeks, after which the use of ordinary tooth-powder was sufficient.

"Prescribed a dilute tincture of arnica, to be used several times per diem, and pressure on the gums with the finger, to be regulated according to their condition.

"After several days had elapsed, I was notified that the lady was suffering very much from the tenderness of her teeth. This was giving her trouble, both from touch and any change of temperature.

\* \* \* \* \*

"Upon investigation, found the teeth previously cauterized were not at all sensitive, and consequently treated them all in this way.

"About five years after date of treatment, I met my patient, with her health perfectly restored, and the teeth were, to all appearances, as perfect and free from defect as could be desired. She assured me that she had not experienced one moment's discomfort with these organs, since my last application of the nitrate of silver. At conversation distance, no one could detect the loss of enamel.

"About three weeks since I met with the husband of this lady, and questioned him concerning the present condition of her teeth. He informed me that they looked very well, and he presumed they were so in reality, as he had not heard any complaint about them.

"So was treated and so terminated one case. I now have two patients (first cousins, male and female) under treatment for the same condition in a modified form. \* \* \*

"The matter of surprise to me, in the above case, is that none of the teeth have decayed since recovery from the typhoid fever, contrary to the almost universal experience—I mean an extra degree of decay, more than follows any other disease." \* \* \*

Dr. Nones, in commenting upon the treatment described by Dr. Arrington, said that he had, for some time, been in the habit of using the fused nitrate of silver for obstinate cases of sensitive dentine, and had yet to meet with discoloration resulting from its application at his hands. The first patient for whom he had tried it was a lady of about twenty-nine years of age, of bilious temperment. She complained of exquisite tenderness of the central incisors,—the approximal surfaces of which had been filed to fit an artificial denture; the enamel having been removed, thereby exposing the terminal points of the tubuli, where it is customary to find the teeth so sensitive: this is especially noticed by the operative dentist, when cutting retaining points for fillings.

Having used the various remedies recommended as having the desired therapeutic properties, such as chloride of zinc, etc., all with but little or no satisfactory results, he dried the parts and surrounding tissues thoroughly with cotton, and guarded by dry napkins, to prevent the solution from running over any but the points effected; he then slightly moistened a stick of lunar caustic and rubbed it upon the denuded dentine, which treatment gave relief.

Since the trial in this case, he had frequently used it in a similar manner, in an extended hospital practice that he had followed among persons suffering from various mental disorders, whose nervous systems were all more or less injured by their disease. He had the pleasure of stating that success followed in every particular.

Dr. Stellwagen—The cause, effect and treatment of sensitive dentine, although most important matters for investigation, and, from universal daily occurrence, the most frequently met with, of the many annoyances to the dentist. are yet the least thoroughly understood. A whole evening might be profitably spent upon the theme. He had not found any specific among those remedies vaunted as such by some of the members of the profession. The fact of so large a number of articles being employed and recommended for this purpose, was quite enough to show how much we are at a loss to cure, by any simple means, this painful condition.

Pretty much every remedy ever mentioned had been used by him, excepting the nitrate of silver, and this, from its well-known staining property, he had feared to use upon tissues so slowly replaced as those of the dental organs. On the soft parts of the mouth, where the

mark left is only transitory, he had frequently used it ; but preferred chloride of zinc, for obtunding sensibility and stimulating the gums to grow around the necks of denuded teeth. A formula like the following had answered well in some cases :

Zinci chloridi,      grs. x ;  
Aquæ Destillatæ,  
℞i. sol.

It is used by soaking a piece of raw cotton in it, brushing lightly over the gums and around the necks of the teeth, three or four times daily for a month or so. Of course the salivary calculi must be removed and the denuded portions of the teeth kept perfectly clean. He requested gentlemen to experiment with this and to report upon it at some future meeting. The success met with from its use in practice led him to advise others, as he himself had been, to try before condemning it.

It would now be his purpose to investigate the effects of the nitrate of silver ; at one time he had thought of applying it to the teeth of one of the lower animals ; but the only thing that it would be likely to show there would be the discoloration and softening, if any followed.

The distilled water in the above prescription might be perfumed, to make it more agreeable.

If but one well-authenticated case of discoloration of the dentine was reported, it should be received with all the weight accorded to positive, in contradistinction to negative testimony.

In using this remedy, he thought it would no doubt be well to wipe it off carefully with bibulous paper (it discolors like indelible ink, and would ruin the appearance of a napkin,) and then wash with water, finally removing, as far as possible, every trace of it with some alkaline fluid, as the aqua ammoniæ. This should be done to save the teeth and the instruments from the effect of the nitric acid.

Dr. Breen said that he had on one occasion used the nitrate of silver, and had had considerable discoloration result almost immediately, but he could not answer as to its permanency.

The patient, who had just met with the accident, had some of the incisor teeth fractured so severely as to expose the pulps, which were highly sensitive and bleeding at the time he first saw them. The lunar caustic was employed to serve as a styptic and obtund the sensibility. He noticed that the small portions of teeth left standing

above the gum became darkened, but as the patient did not again come under his care, he could not give any further history. He considered the discoloration due to the solution getting into the mouths of the tubuli, and thus saturating the dentine.

Dr. Eisenbrey had used the following solution with success, in cases where the gum had receded, leaving the necks of the teeth exposed and exquisitely sensitive :

R.—Argenti nitratis, gr. ij ;

Aquæ dest.

Fi. sol.

He applied it liberally with a camel's-hair brush, and, after a short time, burnished the parts well. The burnisher alone was first tried, but had not succeeded. Sixteen months after this treatment he saw the patient, and, up to that time, there was not the slightest trace of discoloration. With his experience he deemed it to be safe and effective ; he continues to use it at the present time, and in his own mouth, for the same purpose. For the past three years had *personal* as well as *general* experience in its efficacy in treating aphthous ulcers of the mouth—there the benefit derived was instantaneous. Had a patient to return periodically to have these ulcers touched, and finally he gave him some of the solution and a brush to use when occasion required,—this being a *reliable* patient, and knowing that he would not be lost sight of in case any discoloration should occur. Neither his own teeth nor those of his patients had suffered in the slightest degree from the use of the above solution,—could not say what effect a saturated solution would have.

Dr. W. H. Trueman exhibited to the society a number of specimens of porcelain teeth, of French manufacture, at least half a century old, with the semi-cylindrical groove, and tips of platina plate in the place of the usual pins. Although made of the out-of-date *clay* body, some of them presented quite a bony appearance.

Also, several cases of the same teeth, mounted ; one, of four incisors on platina, with very narrow gold clasps around the canines and first bicuspid ; another, with the two centrals and a canine on each side, the teeth soldered on small platina plates united by delicate bands of gold wire. This case was some fifty or sixty years of age, and had been worn for many years. Also several single teeth of a

later date, all made in Europe, rudely mounted on gold, silver, and palladium. One held in by a pivot and two bands.

Several partial sets of natural teeth, mounted on very narrow gold plates, in various ways. All of them in their day had done excellent service. Several old and rudely-shaped pivot teeth, one partially finished, carved from hippopotamus tusk. Several plain vulcanite teeth, English make, remarkable for their dense bony appearance. Also a specimen prepared by him some five years ago, intended to represent the natural gum, in rubber. Equal parts of American red and English light pink rubber were cut very fine and intimately mixed with the scissors. When vulcanized and polished, it has a mottled appearance, imitating the gum much better than a solid color. Also a lower case of eight teeth, cast in block tin on a silver plate, made *heavy* for a patient who had difficulty in keeping an ordinary case down. It was loaded so effectually that, when inserted, the patient was *unable* to raise the lower jaw ;—weight nearly 40 dwt.

The doctor also exhibited a cast of the lower jaw with *five* perfect incisors, forming a *perfectly regular arch*. Another upper cast, with the right canine between the bicuspid. Also two casts illustrating a complicated irregularity case. One taken three years ago, showing the teeth very much crowded and out of position, the centrals standing at right angles with each other. The other taken recently, showing a well-formed arch, with every tooth in position. In order to obtain room for the front teeth, the two bicuspid on each side had to be moved bodily, at least one-quarter of an inch.

Dr. Long had with him three antiquated specimens of mechanical dentistry, belonging to Mr. J. C. Lund. One of them with natural teeth riveted on a piece of gold wire, and secured by clasps to a molar on each side, was found in an old house in New York State. A lower set made of bone, molars and bicuspid, carved incisors, and cuspid of porcelain. A rubber set, with molars of the same material, both made in Paris.—*Dental Cosmos*.

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## DENTAL ASSOCIATION OF THE PROVINCE OF QUEBEC.

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### BOARD OF EXAMINERS.

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MONTREAL, June, 1869.

Dentists in the Province of Quebec, who have had two years prac-

tice are entitled to receive the license of the Board, at once, by first remitting to the Treasurer, J. A. Bazin, Montreal, the sum of \$50, and then enclosing the receipt for the same, and an application for licence, to the undersigned.

Any Dentist, not having received a copy of the Act of Incorporation, and the Rules and Regulations of the Board, will please apply to the Secretary.

Candidates for examination, and other applicants for license, are recommended to attend the adjourned meeting of the Board, in Montreal, on the 21st of September next, at 9 o'clock a. m.

W. GEO. BEERS, Secretary.  
12 Beaver Hall Terrace, Montreal.

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#### MASSACHUSETTS DENTAL SOCIETY.

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The annual meeting of the Massachusetts Dental Society was held on the 24th inst. in the hall of the Society, No. 12 Temple place, the president, E. G. Leech, D. D. S., in the chair.

The reports of the president, treasurer, and librarian of the society were read and accepted, after which the election of officers took place, with the following result :

*President*, Dr. T. H. Chandler ; *First Vice President*, Dr. G. L. Cook ; *Second Vice President*, Dr. J. A. Salmon ; *Recording Secretary*, Dr. A. Brown ; *Corresponding Secretary*, Dr. E. Blake ; *Treasurer*, Dr. J. T. Codman ; *Librarian*, Dr. J. T. Moffatt ; *Microscopist*, Dr. T. B. Hitchcock.

The following delegates were then elected to attend the National Convention of Dentists to be holden at Saratoga on the 1st of August :—Drs. Hawes, Blake, Leach, Walters, Ham, Cook, Chandler, Stearns, Osgood, Thompson and Adams.

The usual committees were also chosen, after which the orator for the next year was balloted for, and Dr. L. D. Shepard was elected, and Dr. E. Blake appointed substitute.

At 12½ o'clock the annual address was delivered by Dr. A. A. Cook, of Milford ; his theme being "The Coming Man of the Dental Profession."

The reading of essays followed the delivery of the address. Dr. T. H. Chandler read an essay on the subject of "Comparative Anatomy of the Teeth," and Dr. T. B. Hitchcock on "The Tartar of the Teeth."

Dr. J. T. Moffatt exhibited and explained an interesting case where a piece of the tooth of a boy 14 years of age, which had been broken off, was placed in its original position, and the tooth grew strong again. Dr. E. G. Leach also made some remarks in reference to cleaning teeth.

The society then adjourned at half-past three o'clock to the Tremont House, where the annual dinner was served. After dinner, speeches were made at the table by Drs N. C. Keep, L. D. Shepard, Kidder, E. G. Leach, T. B. Hitchcock. Dr. J. T. Codman also read a humorous poem written for the occasion. The Society afterwards assembled in one of the parlors of the Tremont House, and an essay on "Dental Nomenclature" was read by Dr. J. T. Codman.—*Boston Med. and Surg. Journal.*

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#### CORRESPONDENCE.

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*To the Editor of the Canada Journal of Dental Science.*

SIR.—With your permission I wish to offer the readers of your valuable journal a few remarks bearing upon the advantages to be derived from a careful study of the merits of "Dental Science" by the public generally. In doing so I am well aware that my motives will be impugned by some and misunderstood by others. But I feel assured that the public are more deeply interested in the matter than is generally supposed, and will therefore, at all hazards, express my opinions, knowing well that had not reformers in all ages and in every department of life, so to speak, made a way of aggression upon unfounded prejudices and popular ignorance, darkness had still covered the earth and gross darkness the people. But truth is mighty and will prevail wherever faithfully advocated. Hence we see the cherished ideas of one age completely exploded in a succeeding one, and when science asserts her rights her prerogative cannot fail to be acknowledged. This being a self-evident fact may we not fairly assume that the science of dentistry will, ere long, commend itself to the consideration of an enlightened and discriminating public, although its advocates have met so much to discourage them in the past and have not unfrequently been denounced as humbugs and impostors. But thanks to those who stood in its defence through evil as well as good report, it is now sanctioned and protected by law,

and all dentists who commend themselves by gentlemanly conduct and skill in their profession are looked upon as professional among professional men, and it is their own fault if they do not maintain the position and secure public confidence. I will venture to assert in the face of the old adage "men are becoming weaker and wiser," that God is not less kind than in former ages of the world, and that a culpable ignorance of nature's laws and a criminal disregard of them is the cause of so much human suffering. Trivial as it may appear, an aching tooth is sufficient to disqualify the boldest spirit for mental effort. Such being the case let us admit the oft repeated maxim that an ounce of prevention is better than a pound of cure, and we will see the folly of extracting teeth in early life which might be retained in pearly beauty to advanced age, by acting on the well understood principles unfolded by dental science, for I maintain that a skilful separation of the teeth goes far to prevent caries and decay, and even when symptoms of decay manifest themselves, timely cleaning and filling will effectually arrest the evil and hold it in check for many years to come, thus affording the individual who listens to the voice of reason the enjoyment of his or her natural, instead of artificial teeth. I also hold that if parents would bring their children to a skilful dentist when getting their second teeth, many of the irregular and deformed mouths which we see, would adorn instead of disfiguring the unfortunate possessor, and much of the vexation incident to such a calamity be obviated. Let parents put this statement to the test and I feel assured that in almost every case where there is not natural deformity the teeth can be brought in regular and with full arch, by simply rendering timely assistance to nature. But why has dental science been looked upon with so much indifference, if not distrust, by the public? Simply because skilful dentists have, heretofore, been imposed upon by the many unprincipled and unprofessional men who over-run the country, literally forcing their services upon the people, and too often have been accepted without either license or established reputation to recommend them, simply because they gave cheap services. Let the public beware of this in future and seek the assistance of those only who regard their reputation in the community, and much of the suffering now experienced under the hands of unskilful operators may be avoided. I live in the full belief that fifty years hence the extracting of teeth will be admitted to be a criminal folly

or at least seldom resorted to in early life, and the dentist who gives sound advice and comes to the aid of nature be regarded as a greater benefactor than the man who comes to destroy the natural teeth in order to substitute artificial ones. Respectfully yours,

J. YEMEN, Mitchell, Ont.

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## EDITORIAL.

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### TWO OBSTACLES IN THE WAY.

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There are two classes of persons practising dentistry, who do much harm to the cause of progress—the dentist of respectable position, who holds aloof from professional intercourse, and the veritable quack. To reason either from the error of his way is a difficult task, though the power now held by the Dental Board of Examiners in the Provinces of Ontario and Quebec, is sufficient, if firmly and judiciously applied, to restrain to a great extent, if not utterly to destroy, the full swing and audacity of the quack. The excuses for non-intercourse made by the other obstacle to progress, are always trifling and absurd. One has personal objections to certain parties connected with the Association, or the Board; another thinks the organization not select enough, too miscellaneous; another thinks his feelings were not sufficiently consulted in the organization; and so on, *ad infinitum*. Now, what could ever be accomplished if we tried to meet such objections? Is it not most unreasonable to suppose that they could be met to the satisfaction of all concerned? Why should private piques enter into such movements; why should the devil not have his due; when would we have had Associations, Incorporation, a Journal, &c., if their origin and success had waited for, and depended upon large numbers? We put it to the calm good sense of dentists of good standing, who continue to ignore the dental movement in Canada and beseech them to unite with the brethren, heart and hand, and give all these progressive efforts their cordial encouragement.

What tribes of dental quacks there are all over the world, who might so much easier be honest men, and far better dentists. In the present state of the profession, we must extend the helping hand to any poor or ignorant operator, who is doing his best, without bluster or falsehood, to make a respectable living. We must put him on the

right road to improvement, and not cut him down. But with the insolent, audacious quack—"War to the knife, and no quarter." Compel *him* to keep within the bounds; the law was made severe for him, and no law was made not to be applied when necessary.

There is a class of practitioners who only take out a license because they are compelled to, and who are emphatically charlatans. There is another class, who frequent hotels, lounge in the reading rooms thereof, and with an abundant supply of cards and circulars, insinuate themselves into the acquaintance of everybody, always turning the conversation to their business, and their particular readiness to operate. You find their bills posted up in every hotel, in many a show case, on many a steamer and car. They are always on the *qui vive* for a good place for a card, and know the most conspicuous backgrounds for a circular. Their talk is all of themselves, their wonderful operations, their cheap charges. Wherever they go, they "talk shop;" they always manage, by hook or by crook, to turn the conversation upon their business, and end by producing a card. By a large amount of bragging they save considerable advertising; their pockets are dental museums on a small scale, and Solomon and the seven sages of Greece rolled into one could not teach them anything, or form such a perfect incarnation of wisdom.

This is no fancy sketch. It is a picture of the dental quack of our large towns and cities, and some parts of it may, perhaps, apply to others who scorn to be called empirics. All this is nothing new or rare. It is to be expected at present; but it is an element derogatory to the profession in every business, social, and moral respect; and our only object in presenting the picture is to show others what to avoid, and in hopes that some word may be fitly spoken that may tend to reform. In one respect, the practitioner who ignores, is as bad as the quack who opposes, for they are both stumbling blocks to progress.

W. G. B.

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### THE ASSOCIATION.

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We again call the attention of the profession to the next meeting of the Association, for the purpose of telling them what good things Dr. Relyea has prepared for us. In the first place, he writes to us that he has engaged the "Marble Hall, a very convenient and well furnished room," for our meetings. Next, he has seen Dr. Potts,

who has prepared a paper to read before the Association, on "Dentistry, its relation to Surgery." Then he says, "Dr. Nichol has kindly consented to give us an essay on "Syphilitic Affections, within the scope of Dental Surgery." Each essay, he says, will be a rich and rare treat to us all. Board can be obtained at from 87½ cents to \$1.50 per day, and if any one wishes to secure a comfortable room, he can do so by writing to Dr. Relyea.

"The steamer Prince Edward has been placed at our disposal, for an excursion, free of charge," he says, and he hopes to see every licentiate, and every respectable dentist, with their wives (or sweethearts we presume, if they are so unfortunate as not to be possessed of "the other half,") at Belleville at this meeting.

Every one should go prepared to exhibit something, or to describe some operation or some failure, or to take some part in the proceedings, if it is ever so little. There are to be clinics, which are always very interesting, and very instructive. Dr. Relyea will give an exhibition of the nitrous oxide, and will have two operating rooms with chairs and all the necessities for performing any operation. We have not heard who the other clinical operators are to be, but we would just hint to them that it will be well for them to take *their own instruments* with them, as it is much easier operating with instruments that you are accustomed to, than with strange ones. We are also happy to say that Dr. Whitney of Buffalo, was appointed a delegate to our Association by the Dental Society of the State of New York, and that he hinted to us, when we met him last month, that we might expect to see him at Belleville. We have also received a letter from Mr. Willmott, the chairman of the committee on the Constitution, inclosing a copy of the instrument which the committee have drawn up. It seems to us to be about *the* thing, with perhaps one or two slight exceptions. Mr. Willmott says the committee have given the subject a good deal of attention, and have endeavoured to so draft it, that it will be acceptable to all parties, and thus save a long time in unprofitable discussion at the meeting. As will be seen, in the copy which we print below, it is proposed to hold but one session in the year. The committee say they think that more benefit can be derived from the formation of local societies, to be held in the place of the semi-annual meeting, than from a semi-annual meeting of the Association. The committee will be prepared to give their reasons

for the change when the subject comes before the Association. In the meantime, let every one look the draft over carefully and be prepared to accept it as it is, or have an amendment drawn up, so as to make as little delay as possible.

C. S. C.

#### DENTAL ASSOCIATION—DRAFT OF CONSTITUTION

ART. 1.—This Association shall be known as the "Union Dental Association of Ontario."

ART. 2.—The objects of this Association shall be the professional improvement of its members, and the general elevation of the standard of dentistry in this Province.

ART. 3.—The members of this Association shall be such licentiates of dental surgery and regularly articulated students of dentistry, of the Province of Ontario, as, being elected by vote, shall pay the prescribed entrance and annual fee, sign the Constitution and be governed by the rules and usages of the Association, and members of the dental profession not resident in Ontario, members of the medical profession or other persons, who, for services rendered may be elected members of the Association.

ART. 4.—The officers of the Association shall be a President, Vice President, Secretary and Treasurer, who shall be elected by ballot at the first session of each annual meeting, and immediately assume the duties of their office.

ART. 5.—The President shall preside at all meetings of the Association, certify all accounts passed by the Association, fill vacancies amongst the officers occurring during the year, and at the close of his term deliver an address to the Association. The Vice President shall in the absence of the President discharge the duties of President. The Secretary shall keep a record of the proceedings of the meetings of the Association, keep a list of the members of the Association and notify them of its meetings. He shall conduct the correspondence of the Association, and report to each meeting a summary of the transactions for the year.

The Treasurer shall receive from the members their entrance and annual fees, pay all accounts passed by the Association and certified by the President, and at each meeting present a report of all monies received and paid, and the members in arrears for dues.

ART. 6.—The entrance fee for membership shall be one dollar, and the annual fee, payable in advance, one dollar.

ART. 7.—Any member proven guilty of unprofessional or immoral conduct, may be expelled by a two-third vote of the members present at any meeting.

ART. 8.—The meetings of this Association shall be held annually, at such place as it may from time to time select, commencing on the Tuesday of July.

ART. 9.—The meetings of this Association shall be governed by the Rules of Order usually observed by similar societies.

ART. 10.—This Constitution may be amended by a two-third vote at any annual meeting.

Committee.	{	James B. Willmott, L. D. S.
		John Bowes, L. D. S.
		R. Ravell, L. D. S.

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#### SOME LARGE GULLETS.

We have frequently had occasion to remark that some people could swallow more than most of us ever thought it possible, and that some of the things swallowed did not pass through that particular *gullet* which is supposed to be the main thoroughfare from the mouth to the stomach; but the particular case of swallowing to which we refer, is such a *distention* that we think it should not be lost. A few days ago we received a letter from the leading dentist in a neighboring city, from which we make the following extract: "A lady of this place, this morning, swallowed a full upper set of teeth on vulcanite, she is in the hands of the physicians now. I do not know what her condition is, only her husband says she is not suffering, and can swallow. I intend to keep an eye on the case, and will report. Dr. ——— says they must go through. I say, no, they must come back. What think you?" We replied asking asking for further information, and in a day or two received the following: "When she found that she had swallowed her teeth, she first called for the minister, and the servant ran for the Rev. ———. Before he arrived, however, she started for Dr. ———, and finding him ill, she brought up at the office of Dr. ———. He made an examination and felt the teeth in her throat, and commenced to give emetics, and says he gave her two grains, then three, then four, and continued until he had given her twenty grains of tartar emetic, and yet no symptoms of nausea. He then gave her a bowl of wormwood, but she was proof against it

all. At this stage of affairs the lady went home, and Dr. ———, hearing of the case, went to the house, and after examination, said that the teeth must be cut out or she would die. Accordingly then, imagine the patient, about to undergo a most formidable operation, inclined on a couch, chloroform on hand, towels, sponge, and bowls of warm water in readiness, and Dr. ——— drawing up closer to his patient, who imagined her mortal career near ended, and just as he is about to plunge into the poor woman's throat for the teeth, the servant who was standing a little in the back ground, screamed out, "stay, here are the teeth on the floor." We think the "upper set of teeth on vulcanite" must have been exceedingly *small*, or the woman and the two doctors must have very large "swallows." C. S. C.

CODE OF ETHICS.—In reply to the wish which we expressed in the last number of the *Journal*, some of our friends have sent us the codes of ethics adopted by the American Homeopathic Institute, and the North and West Middlesex Medical Association, of Ontario. We will carry these with us to the meeting of our Association.

MATRIMONIAL.—Married at the residence of the bride's father, Medina, N. Y., by the Rev. Dr. Launsdale, Mr. H. B. Peterson, Dentist, of Kansas City, Missouri, to Miss Jennie C. LeValley, of the former place. We acknowledge the receipt of some large slices of the wedding loaves.

LEAVING CANADA.—We call the attention of our readers to the advertisement of Mr. T. J. Jones, Dentist, Bowmanville. It will be seen that Mr. Jones is intending to go to his friends in the States, and is desirous of disposing of his large and increasing practice. Any one wishing to locate, we think, would do well to confer with him before coming to a decision.

#### ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

The next meeting of the Board will be held in the City of Toronto, commencing on Tuesday, July 20th, 1869, at 10 a. m., for the purpose of examining candidates and granting certificates to practice Dentistry. Further information will be given by applying to the Secretary up to the 15th of July, and afterwards at the "Queen's Hotel," Toronto. The place of meeting can also be ascertained from him at the "Queen's." Licentiates will please send in the names of all persons practicing without licence in their respective localities before the meeting.

J. O'DONNELL, L. D. S.

Peterborough, Ont., June 17th, 1869.

Secretary.

THE  
CANADA JOURNAL  
OF  
DENTAL SCIENCE.

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VOL. I.]

JULY, 1869.

[No. 12.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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TAKING IMPRESSIONS FOR PARTIAL SETS OF TEETH.

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BY C. S. CHITTENDEN.

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In inserting partial sets of teeth, I always *wish* to do so with pressure plates. Of course I am sometimes compelled to resort to clasps, as it is, from the circumstances of an occasional case, impossible to make a pressure plate adhere with sufficient force to be satisfactory to myself or the patient. But, there need be but few such cases, if we could get a *perfect* impression of the parts. Usually, I am able to succeed with wax, but now and then a case is presented in which I find it necessary to adopt some other method of taking the impression, on account of the difficulty of removing the wax from the mouth, without changing the form of it. The following is the plan which I adopted some years ago, and which I have found to be the most successful, as well as the simplest method of any that I have tried. I first take an impression in wax and draw a cast from it. Then I take a piece of sheet lead and fit it to the cast as nearly as possible, by rubbing down with burnishers, something like a trial plate, leaving it a little higher on the edges than a plate which is to be worn, would bear to be. I use this lead pattern or trial plate, or whatever any one may choose to call it, for an impression cup, but as it would not be stiff enough to answer that purpose of itself, I punch some small holes through the lead, and pour plaster of Paris over the whole of the lingual surface, letting it run through the small holes in the lead, so as to bind the plaster firmly to it, in the same way

that mortar is bound to the lath on walls and ceilings. When the plaster has set I cut away all that will be in the way, and having prepared the plaster for the impression, I pour it into this made-up cup and putting it into the mouth I press it home in the usual way. I should say, however, that the plaster for the impression should be rather thin, so as to flow into all the spaces between the teeth. I allow it to set thoroughly before attempting to remove it, as it is less likely to break in doing so. Being far less thick and clumsy than the ordinary impression cup, almost any one can bear it in the mouth for ten or twelve minutes without much inconvenience, thus enabling me to take my own time in the removing of it from the mouth. In doing so, I first cut away, with a sharp pointed knike *all* the plaster from about the teeth, that I think will be likely to break away, and then, with some small instrument, very gently pry it away from the teeth, until it can be removed from the mouth without difficulty. From this impression I draw a cast and make the plate in the usual way, but of course, the teeth must be arranged in the *mouth*, as this is only an impression of the palate and lingual surfaces of the teeth.

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### PREMATURE DECAY OF THE TEETH.

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BY R. TROTTER.

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[Continued from page 292.]

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In my last paper under this caption, I endeavoured to impress upon the reader the importance of viewing it in connection with physiological and pathological laws, in order to commence at first principles in the discussion of this important subject. From this position I shall try to point out wherein those laws have been violated, and the result of such infraction, in so far as the dental organization is concerned. The cause of the premature decay of the teeth dates from a period far remote from the time it is seen or felt. In what is usually called the better and middle classes of the people of this continent, the little misses, who are to be the future mothers, instead of getting plenty of out-door play, exercise and air, are put by their parents to their books and school, years before they ought to leave the nursery or play grounds, with the idea of making prodigies of them. And teachers with an ambition to get a reputation and please the parents, over-tax both mind and body at school, and send them home at night,

with an armful of text books, consisting of Dictionary (a nice substitute for play,) Arithmetic, Grammar, Geography, History, Astronomy, French, German, Italian, &c., &c.; (Physiology excluded as that is only fit for medical students,) out of which tasks must be learned for the next day. Then, the ambitious mother, and the music teacher, peradventure, have *their* rack ready in the shape of a piano forte, on which the poor, mentally and physically worn out child must be put, for at least an hour. Under such circumstances appetite for simple and proper food is lost, and the arts of cookery are called in to supply it with dainties. The above is not an exaggerated picture of the manner in which thousands of young ladies have been brought up, and a sad spectacle they are, many of them, before they get out of their teens. These have been, and are the mothers of the present generation. Under such circumstances, with the aggravation of social customs and fashions, how can it be that a vigorous constitution, or normal dental tissue can be imparted to the offspring? It is impossible. Then we have the errors of nursing and dieting added to the inheritance of a feeble constitution. Fashionable mothers at the present day appear to think it beneath the dignity of a lady to see after their offspring, many of whom are left under the care of unfit and heartless servants, who instead of waiting on them and attending to their wants, frequently dispose of them for the time with doses of paregoric, Mrs. Winslow, &c.

And as to diet, instead of its being regulated to suit their feeble constitutions and tender years, it is too frequently more like a ploughman's. It has not been an unusual practice to bring children to the table as soon as they are able to sit on a chair, and give them fare in common with adults. After partaking of the stronger kinds, more than nature requires, they have all the courses of "tongue ticklers" to bear up under, and frequently go from the table literally stuffed—an ordeal sufficient to overtax the most vigorous digestion. The consequences of which are defective nutrition and assimilation, and the production of agents which act destructively on the already imperfect dental tissues. The custom of not using such food as contain the elements that are required to constitute normal tooth structure, and depriving one of the chief articles of food, flour, of its bone making qualities, in the separation of the bran and shorts must not be lost sight of, as being among the fruitful causes of defective teeth.

The above remarks refer to the constitutional causes of the prema-

ture decay of the teeth, the other causes, such as destructive agents coming in contact with them, the want of regular and proper cleansing, &c., will be sufficiently obvious without any consideration from me.

I have given in an imperfect manner what I believe to be some of the main causes of the premature decay of the teeth. I will now as an addition to my paper, give an authority which differs somewhat from the theory I have advanced. A perambulating dentist called at my office not long since. After "taking stock of him," I remonstrated on the impropriety of going about the country, tinker like, as an impostor, pretending to practice dentistry, and advised him, being a young man, and possessing fair abilities, to go some where and study the profession scientifically. But he ignored the idea of science having anything to do with dentistry, and said it was purely a mechanical calling. After confounding him in several ways, I asked him what he would say if a parent brought a daughter to him who had just commenced her teens, and asked him, to be informed as to the cause of the early decay of her teeth? Well, he said, I would tell her that it was biological causes. I said that was rather a big word for many patrons. I suppose you mean that the mothers mental impressions during the gestation and infancy of the child determine the structure of the teeth. Yes, he said—I caved in.

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## PROCEEDINGS OF SOCIETIES.

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### REPORT OF DISCUSSIONS AT THE TWENTY-FOURTH ANNUAL MEETING OF THE MISSISSIPPI VALLEY DENTAL ASSOCIATION, MARCH 4, 5 AND 6, 1869.

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The first subject presented for consideration was "What are the best methods of controlling flow of saliva during the operation of filling teeth?"

Dr. Goddard remarked that inability to control the saliva in the mouths of his patients, he had found one of his greatest difficulties in filling teeth. Has found it impossible in many cases to keep the mouth dry by any of the ordinary methods. He had been for a few days using the rubber dam, in connection with the saliva pump, and thinks it has, in some cases, advantages over any other method.

Dr. James Taylor finds very great difficulty in keeping the mouth dry while operating; it sometimes seems as though the saliva flows in great quantity through all the ducts, into the mouth, and to pre-

vent flooding is next to impossible. The breath is oftentimes so loaded as to completely moisten the filling when it is permitted to come in contact with it.

Dr. Berry thinks by heating and keeping the gold slightly warmer than the mouth, during the introduction of the filling, the moisture from the breath will be obviated; employs the ordinary means for the exclusion of the saliva.

Dr. McClelland has discarded the use of saliva pumps; thinks they are useless for keeping away saliva; relies upon a good supply of napkins, properly employed, and in connection with them uses "Hawes Tongue Holder;" especially is this arrangement applicable for the inferior molars of the left side, and in addition to this, while operating, inclines the head of the patient to the right; for the inferior molars of the right side, holds the napkins in proper position about the teeth with the fingers, inclining the head to the left side; removes the saliva often from the mouth, by wiping out with the napkin; has found that sensitiveness of the dentine increases the flow of the saliva; hence, endeavors to obtund that before filling, and for this purpose usually employs creosote; success depends very much upon having all things in readiness, and a good assistant is almost invaluable.

Dr. Taylor expressed a desire to know more about the rubber dam; has used the tongue holder twenty-five years; much depends upon the ability of the patient to retain the instrument in its proper position, so it will best secure the parts in the desired position, and not impede the work of the operator.

Dr. Taft: In deciding upon the method of controlling the saliva in the mouth during an operation, there are several conditions and circumstances that must be taken into account, such as the location of the point to be operated upon, the condition of the dentine and the tooth as a whole, the extent of the decay, the amount of saliva, and its character, the point from which it most freely flows, and the ability of the patient to keep the parts quiet.

The variations attending these conditions indicate to us very clearly that no single method will in all cases, or even in many cases, accomplish the desired object. Sometimes a small amount of saliva, owing to its peculiar condition, will be far more difficult to control than a far greater quantity of a different character. A constant movement of the muscles of the mouth and throat add very greatly

to the difficulty of excluding saliva from an operation. Has used almost every method and appliance that has ever been suggested or brought to the notice of the profession, and finds something, and usually much, to commend in almost every one of them; uses napkins much in the manner suggested by Dr. McClelland, more than any other single appliance, but very frequently, and usually quite efficiently, employs bibulous and blotting paper, the rubber dam, and two or three forms of saliva pumps, together with the various tongue compressors; but least efficient of any of these, is the old fashioned tongue-holder or speculum, held by the patient, for there is not more than one patient in fifty that will retain them properly in place, but when a little fatigued will relax the hold and then all is lost; regards the rubber dam as a very great acquisition, and one by which some cases that have hitherto proved almost incontrollable, are by it completely manageable. To Dr. Barnum is due the lasting obligation of the profession for the introduction of this material.

Dr. Morgan has used and relied very much upon blotting paper and napkins of fine linen, about eight inches square; folds into the proper shape and packs them in about the teeth, so as to make pressure upon the mouth of the salivary ducts; never permits the instrument to touch the lips.

Dr. Hays described a little appliance in the form of little round pads, made of porous clay and properly biscuited, for closing the mouths of salivary ducts; they are made plano convex and double convex, from one-half to three-fourths of an inch in diameter; others are made crescent shape. The form and size should be governed by the locality they are to occupy; they are the invention of Dr. Southwick, of Buffalo.

Prof. Cutler read an essay on development of the teeth, in which the idea was advanced that the roots of the teeth, and especially the molars, are not fully formed till a period much later than is generally supposed; that at the time the crowns of these teeth seem to be fully developed, the roots have very commonly large cone-shaped openings at their ends, in which, the destruction of the pulps becomes a serious consideration. The removal of pulps from teeth, the roots of which are in this condition, will be liable to occasion very serious injury to the living parts beyond. The careless or inexperienced operator is very liable to pass entirely through the canals. The roots

of the teeth are not in many cases completely developed before the age of eighteen or twenty years.

Dr. Watt feels a very great interest in this subject; he would suggest that there is very great variation in different persons in the period of the complete development of the teeth. He has extracted the first permanent molars at the age of six years, and found the roots perfectly formed, and others at ten years imperfect. This difference depends upon variation of the nutritive function and the developing power. Great care should always be exercised in applying arsenious acid in young persons. He referred to a case in which a girl had an incisor broken off, and upon the root wore a pivot tooth nine years, after which the tooth was removed, and the root found incomplete at its end, never having been completely formed, but it has sustained the artificial tooth well during the time, demonstrating the ability and endurance of even these imperfectly formed roots. There would not be as much liability to injury in the use of the mallet for filling such teeth, as by the clumsy, awkward hand pressure that is so frequently employed. He discussed at some length the theory of mallet pressure, as compared with the hand pressure.

Dr. Cutler: It is almost impossible to fill the canals of roots before their completion, without doing great violence to the living parts beyond. Usually the roots of the teeth are not perfect till the tenth year.

Dr. Oldham differs from both Drs. Cutler and Watt; he believes that the canals of imperfectly formed roots, even though they be somewhat conical as described, may be well filled and better with the mallet than by any other method. He claims that greater precision in the introduction and consolidation of gold is obtained by the use of the mallet.

Dr. H. A. Smith read an essay upon the action of arsenious acid, when applied to the pulps of the teeth.

Dr. Morgan, in remarks upon the essay, says that arsenious acid will induce sloughing of soft tissues.

Dr. Watt has been accustomed to use arsenious acid for producing sloughing.

Dr. Taft: This result is not produced without the agent being taken into the tissue thus affected.

Dr. H. A. Smith suggests that gentlemen may be mistaken in their preconceived opinions.

Dr. J. Taylor: How is there sensitiveness if their nerve is dead or the circulation suspended? He prefers the plan of leaving the teeth for two or three weeks after the application of arsenic before filling, that the pulp may slough away and all sensitiveness be destroyed.

Dr. Cutler has had extensive experience in the use of arsenic in medical practice. It will produce extensive sloughing. It is taken into the system and breaks down the red globules of the blood, combining with the iron, thus depriving the blood, so far as this process is accomplished, of one of its necessary elements. The argument to sustain this theory was in part based upon the fact that the hydrated sesqui-oxide of iron, combines with and precipitates arsenic with such facility as to constitute the best known antidote, to its poisonous influence.

I have studied the nature and action of arsenious acid with a considerable degree of thoroughness. Do not think that any of the toxicologists have given the correct theory of the action of arsenic. It produces no change in the general structure of the tooth pulp, when applied for its devitalization, but the red blood corpuscles are broken up and destroyed; this is accomplished by the combination of the arsenic with the iron in the blood. The coloring matter of the blood consists in part, at least, of a sesqui-oxide of iron and the arsenic uniting with it forms an arsenuret of iron. It may also have a catalytic influence upon some of the other constituents of the blood. Arsenic is far more liable to be taken up by dentine before the teeth have arrived at mature development, and mischief is far more liable to occur. We know but little of the definite action of poisons.

Dr. McClelland asks if there is not, consequent upon the devitalization and decomposition of tooth pulp, a gas formed that acts as an irritant upon the living parts.

Dr. Cutler replied: There will not be gas formed to any appreciable extent, though by the breaking down of the red corpuscles carbonic acid gas may be formed to a slight extent. When the vessels at the point of a root are cut off, the blood that flowed into the pulp will be diverted to some other channel.

Dr. Morgan is very positive that arsenic by osmotic action does pass through the dentine. The enamel is organic structure and possesses vitality, as is shown by the fact that enamel not sustained by living dentine becomes friable and easily broken down.

Dr. Taft remarked that in many cases in which arsenic is used for devitalization of the pulps of the teeth the periosteum becomes more or less affected. This may occur either from the direct influence of the agent upon the tissue, or in part by this, and in part by the congestion consequent upon the sudden stoppage of the blood in its natural course through the vessels of the pulp, and its diversion into other channels, or the difficulty may occur entirely from this latter condition. The blood usually, perhaps upon being turned back, finds its way into the veins by anastomosis, but it will sometimes fail in this and then it passes into the cellular tissue through the ruptured or enfeebled walls of the vessels, when irritation ensues.

SECOND DAY—EVENING SESSION.

(By special request the first hour of the session was occupied by Dr. Watt, in the delivery of a lecture upon nitrous oxide as an anæsthetic, a synopsis of which we endeavor to give in this connection.—REP.)

MR. PRESIDENT AND GENTLEMEN: As most of you are more or less familiar with my recent personal history, I make no apology for appearing before this, the oldest Dental Association in the world, without a written communication.

In compliance with request, I propose a converse, for a while, on the preparation and use of protoxyd of nitrogen, or nitrous oxyd, as an anæsthetic. This is a subject of great practical importance to the Dental profession, inasmuch as we are called upon to inflict pain more frequently than general surgeons, and our operations, though fearfully painful, are of such brief duration that it would be almost warrantable to conclude that this anæsthetic was designed for our special use.

Protoxyd of nitrogen, as its name imports, is composed of one equivalent of nitrogen, united with one of oxygen. The proportions, numerically, are about 14 of the former, and 16 of the latter. It will be noticed that these are the chief elements which constitute our atmosphere, the substance under consideration being about twice as rich in oxygen as atmospheric air; and here these elements are chemically combined, while in the atmosphere they are mechanically mixed.

Nitrous oxyd is a gas about fifty per cent heavier than atmospheric air, is colorless, and has a peculiar sweetish taste and odor. Its volume is the same as that of the nitrogen it contains; hence, by loss

of oxygen from any cause, it is not reduced in bulk. This is practically worthy of notice. In this gas the elements are held together by a very feeble affinity. Its oxygen is, therefore, very easily separated from it. On this principle it supports combustion almost as readily and well as free oxygen. The oxygen is thus furnished in its nascent state, and is as active as ozone. It is quite probable that it supports respiration on the same principle. There is a popular error among writers that it may be well to notice. It is generally stated about thus: "Sir Humphrey Davy discovered \* \* \* that it supports respiration for a few minutes. He breathed 9 quarts of it, contained in a silk bag, for 3 minutes, and 12 quarts for rather more than 4; but no quantity could enable him to bear the privation of atmospheric air for a longer period." Now does any one suppose that 12 quarts of *atmospheric air* used in the same way would support respiration more than 4 minutes? If he does, let him try it; and if it fails him, let him be consistent by writing and printing that "no quantity" of atmospheric air will sustain respiration for a longer period. The ox bladder and silk bag experiments of the older chemists amount to little in determining the support to respiration derivable from this gas. They were mainly ascertaining how long a man can breathe his own breath.

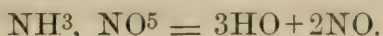
It must not be inferred that this protoxyd is a substitute for atmospheric air, far less that it is a better supporter of respiration, as I have often heard claimed by its over-zealous friends. But that it is capable of supporting respiration far beyond what is indicated by the experiments of Davy is now clearly demonstrated by experiment. I have known it to be breathed for an hour, with less than twenty inspirations of atmospheric air during the time. I have many times seen it breathed twenty minutes, without the admission of any air, the quiet state of the patients, their natural complexions, and their after statements proving that they suffered no inconvenience at the time; and, when the gas is pure and properly administered, even for these long periods, the condition of the patient is as unlike asphyxia as can be well imagined. These experiments were not made with regular patients, but were legitimately conducted, from a feeling that we must know far more about this agent, or abandon its use.

This gas is usually obtained by decomposing nitrate of ammonia by heat. It may be preserved over water, as there will be but little waste after this liquid is once saturated. Several precautions are to

be observed in its preparation. It is much easier to prepare pure ether or chloroform than pure nitrous oxyd. It is sometimes difficult to obtain pure nitrate of ammonia. Here are two specimens, neither fit to be used as ordinarily directed. The gas prepared from this, by the ordinary process, produces a sense of suffocation, and tonic spasm of the muscles of the throat, and sometimes of the respiratory muscles, these symptoms continuing with greater or less severity, in some cases for several days. The salt contains a soluble chloride. The other specimen which I show you does not contain a chloride, but when ordinarily used, yields a gas but little less suffocating than the former. The muscular spasm of the throat is not so continuous as in the former case, but quite as prolonged. Of course the experiments with such agents have been but few. The latter specimen yields pure nitrous oxyd, after about one-fourth of it has evaporated. (It is less difficult to obtain the pure salt now.—W)

But the use of a pure salt, by no means insures a pure gas. To obtain such a result, several conditions are to be observed. The nitrate is to be decomposed at the proper temperature; and this implies some reliable method of *regulating* the heat. In short, the apparatus should be automatic; for no one can regulate the heat properly on the basis of observation.

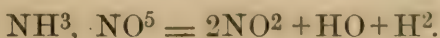
The thing to be aimed at is to decompose the nitrate so as to obtain only protoxyd of nitrogen and water, as indicated in this equation:



It is difficult, and perhaps impracticable, to obtain exactly this result, as below the proper temperature the order of decomposition is not wholly as indicated by the equation, and of course, in reaching the proper degree of heat, this lower temperature has to be passed. For this reason, the heat should be rapidly raised from the melting point of the salt to the degree of proper decomposition.

By decomposing the nitrate at about 470 ° Fahrenheit, I have obtained the most satisfactory results; and any temperature between 465 ° and 480 ° will afford good gas, if proper care is taken in other respects.

By running the heat too high, a part of the nitrate is decomposed so as to yield binoxyd of nitrogen, sometimes called nitric oxyd, as indicated thus:



As nitrous oxyd is formed at the same time, it and the free hydrogen

form an explosive mixture, and a series of infinitesimal explosions result, agitating the liquid differently from ebullition or effervescence. This condition is readily detected by the practiced eye.

The nitric oxyd, thus formed, is a very poisonous gas, and is very rapidly converted into nitrous acid, which as rapidly passes into nitric acid, by increase of oxydation. This is a much lighter gas than nitrous oxyd, and is far less soluble in water; consequently contrary to the popular opinion and the statements of some writers on the subject, it can not be removed from nitrous oxyd by washing, or passing the mixture through water. A mixture of these two gases becomes more and more unfit for use, by repeated and prolonged washings.

In administering the nitrous oxyd, the patient must not be smothered. This is an important, yet much neglected point, in the use of any anæsthetic. The apparatus ought to be so arranged that respiration is not in the least obstructed. This inhaler is defective. The expiration is considerably retarded, which is a very serious fault. A tube of sufficient diameter, with proper valves, without wings or flanges is the best "inhaler." The patient should be seated in a *very* comfortable position; for with a few inhalations of the gas sensation is so much exalted that trivial inconveniences become painful and very annoying. When the patient has taken the inhaler into his mouth, hold open the valve, and have him make a few full inhalations of air, for the purpose of removing *all* carbonic acid from the air cells. This is practically of very great importance. The first full inspiration of nitrous oxyd seems almost to overwhelm the lungs. The rush of carbonic acid into the air cells is very great. Hence it is nearly always best, after a single inspiration, to open the valve, and let the patient take one or two breaths of air; and through the whole process of administration, whenever, by flushed features or otherwise, there is the least indication of suffocation, admit air freely till relief is afforded. After a little time the rush of carbonic acid abates, and the admission of air is not called for. There should be nothing like forcing the patient to take the gas, such as holding the lips, etc.; for when the gas is pure he *wants to take it*. And when pure and properly administered, it produces neither delirium nor darkening of the complexion. I have sometimes used it regularly for months, without seeing either of these symptoms. Both are caused by the presence of carbonic acid in the air-cells, and not by nitrous oxyd.

Respiration is rendered much slower by the inhalation of nitrous oxyd, being often reduced to six or seven, and even to three or four inspirations to the minute, and this usually without any sense of suffocation or approaching asphyxia. The retarded respiration sometimes continues a considerable time after the operation, causing the patient to feel a sense of prostration; but this is not commonly the case. When a second operation is necessary, it is best to wait till respiration has been re-established.

#### FILLING TEETH.

Dr. Taft suggested that perhaps one of the most common faults in practice in filling teeth, is a want of thoroughness in manipulation; too many points are passed over without sufficient attention. How often does the thought occur to all of us, "Oh, well that will do," and especially when we are hurried and fatigued. Failure will often enough ensue, when the highest skill exercises the greatest care. Let all things be done in the most thorough manner possible. I would not intimate that there is but one good way or efficient method of performing this operation in our practice, there will be differences here, as well as everywhere else. I will for a moment consider the operation of filling proximal cavities of the teeth, and will direct attention to but one feature of this, viz: the separation. This in the molars and bicuspidis is usually effected by cutting and filing from the proximal surfaces in which the cavity is situated, till a V shaped space is formed, cutting in this manner till ample space is secured through which to operate, and firm borders of the lateral walls obtained, and then filling the cavity only flush with its borders.

While in some cases this perhaps is the best method, there are others in which we think a different one preferable; for instance, when there are but small or medium sized cavities, the lateral walls thick and firm; it is better to make only separation enough between the teeth to make a good finish upon the proximal surface of the filling; space enough to receive a thin finishing file and tape will be sufficient, and this in the majority of cases, can be obtained by wedging. An entrance into the cavity for the introduction of the filling, should be made by cutting down through the masticating surface of the tooth, into the decayed cavity. This cutting should usually be made as far toward the center of the crown as the decay extends.

By this method the natural form of the tooth is restored, and the ability to masticate is not impaired, and the difficulties arising from

a large V shaped space are obviated, and the facility of performing an operation in this manner is equal to, if not greater than other methods.

Dr. Driggs, It is one thing to know how to perform, but quite another to do it. I still adhere to the old method of preparing cavities, have selected the old masters as my copies. There is a disposition in the profession to avoid extremes—to refuse to operate upon teeth that can not be saved with certainty. My practice is to cut down all thin, friable walls or edges, except perhaps upon the incisors; in the molars always cut away the thin edges or walls, and do not make much protrusion of the gold; do not attempt to make contour fillings. I do not believe they will ultimately prove permanent; in a small proximal cavity of a molar, do not think the best method of effecting an entrance into the cavity is by cutting down from the masticating surface of the crown, but obtain an entrance by a separation of the teeth, making as little cutting of the tooth as possible, to secure a good entrance into the cavity. I am in favor of conservative filling; do not extract all badly decayed teeth, nor do I always cut down a large portion of the tooth; but aim to have strong walls, and fill flush with their edges, and in favorable cases, build out somewhat so as to make a convex surface to the filling.

Dr H. A. Smith, I regard the principles announced by Dr. Driggs, in the main correct; there are, however, various methods of making very good operations.

I desire further information in regard to the new preparations of gold for filling. I am somewhat in doubt as to the advantages claimed for them; and shall be glad to know that they are all right.

Dr. Goddard, I have used about two ounces of "Morgan's Plastic Gold," and chiefly in connection with soft foil; but am not yet fully satisfied with the tests I have made. I fear from some things I have seen, that it may fail; but, as with many other things, so with this, time will decide.

About eighteen months ago, I operated upon a superior central incisor, a large cavity upon its anterior surface; after properly forming the cavity, I fitted into it as neatly as I could a piece of natural tooth; this I set in the cavity with os-artificial, it is yet worn without any apparent change. Can not operations of this kind be frequently made?

Dr. Watt, I have in three instances performed operations in the

same manner as described by Dr. Goddard ; all were very satisfactory.

Dr. DeCamp, This is a subject of great importance to all, and especially to the younger members of the profession.

Gold is doubtless the best material known for filling teeth ; but there may be a diversity of opinion as to the form or condition. I have used it in every form in which it has been presented ; foil, crystal, sponge and shred. Some of these, I have observed, discolor after being in use for a time. I have attained better success, made more reliable fillings with soft gold foil, than with anything else. In superficial and difficult cavities, I usually prefer adhesive gold. The form, size, and location of the cavity to be filled, will to some extent determine the kind of gold ; I fill extensively with blocks or cylinders.

Dr. Watt, There is a great want of uniformity in all the preparations of gold. This arises from two sources, viz. : the mechanical and chemical manipulation.

Much of our failure to secure good results with new materials and new forms, arises from a want of the proper knowledge to direct their use. Gold perfectly crystalized is, I think, the best form in which it has yet been used. The production of this requires a high degree of chemical knowledge. Crystal gold can not be made as cheaply as foil. Far greater rapidity of execution in filling is attained with crystal gold than with gold foil.

Dr. Arrington, I am not exclusive in my practice, nor in my teaching. I used "Lamb's Gold" for a time, I then thought it good ; but have found several samples of it very imperfect, which illustrates what Prof. Watt has said upon that point. I regard "Watt's Sponge Gold" as better than any kindred preparation that I have used ; but I have my fears that it sometimes clogs, and does not conform to all inequalities. I use perhaps non-adhesive foil more than anything else ; use nothing for filling but gold and os-artificial. Have put in these fillings in the manner described by Dr. Goddard ; I used porcelain, but I now think the natural tooth would be better. I have always condemned the use of amalgam for filling teeth, because it is not reliable, and because of its pernicious influence upon the profession. I do not use "Hill's Stopping," because "os-artificial" is better. In many cases the latter makes excellent fillings, and under no circumstances can it result in injury.

Dr. G. W. Field, By permission, I would ask, if there is any efficient treatment for Dental exostosis, and if so, what it is ?

Dr. Watt, This affection is easily treated; it is simply a hypertrophy of the cementum. By this growth, pressure is made upon the surrounding parts, these are absorbed, and the growth goes on and oftentimes branches of nerves are impinged upon, and neuralgia occurs. I have found nothing better for treatment of this affection, than iodide of potassium. This agent acts especially upon abnormal growths, breaking down and destroying them. Healthy tissue resists the action of this agent correspondent to the vigor of the vitality, while abnormal tissue is acted upon in almost any case. Iodide of potassium may be taken in from 10 to 30 grain doses three times daily.

There are cases of exostosis, doubtless, in which extraction of the affected tooth or teeth is the only remedy.

Dr. J. Taylor, I have found patients who could not tolerate iodide of potassium.

Dr. Watt, Bromide of potassium may be substituted for the iodide. It may be taken in 20 to 30 grain doses twice daily.—*Dental Register*.

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## SELECTED ARTICLES.

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### ALVEOLAR ABSCESS.

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BY DR. W. H. SHADOAN.

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[Continued from page 307.]

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### IODINE AND ITS TINCTURES.

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Iodine is an elementary non-metallic substance, having some resemblance to chlorine. It was discovered in 1812, by a soda manufacturer of Paris. Sometime after this its therapeutic properties were discovered, since which it has gradually come into general use, so that at the present time it is universally a standard remedy. It is found chiefly to exist in the kelp of sea weeds, in the animal, and mineral kingdom. It is also found as an iodide of sodium in several mineral springs of the United States, and in some minerals in other parts of the country. As a therapeutic agent, iodine is used as an absorbent—it excites absorption in the alveolus, and in erysipelatous affections. In glandular enlargements and malignant growths, its use is more beneficial than most other stimulants, in bronchocele and other affections of the throat, and thyroid glands iodine is considered invaluable. As the Dentist is not expected to treat such diseases,

the further consideration of the agent in this connection will be discontinued. It has only been thus spoken of to show its efficacy in such cases.

Iodine is less used by the Dentist than the tincture ; as an internal remedy it is seldom used, the iodide of potassa being considered far superior. Iodine may be useful in the local treatment of chronic inflammation or induration of the salivary glands, in dental periostitis, in alveolar abscess, in some morbid states of the antrum, in thickening of the mucus membrane, in tumors of the mouth, and in absorption of the gums and alveolar processes. The officinal tincture will answer very well for periostitis, thickening of the membrane, and sometimes for abscess. For chronic catarrh, or inflammation of the lining membrane of the antrum, the compound tincture very much diluted is a good injection. For destroying the sac in alveolar abscess, a solution of iodine and creosote is a sovereign agent, and when not too concentrated, the same is an admirable application to the margins of the gums and alveolar processes, after the removal of all irritating and dead substances ; but care must be taken that it is not applied too frequently. It is an escharotic, and as a general rule it is well to let the slough separate before a second application. To use externally I prefer a colorless solution of iodine, prepared by combining equal quantities of compound tincture of iodine and pure aqua ammonia. As combination takes place, the mixture becomes transparent and will not then color the skin. I do not think of any condition which will require the Dentist to prescribe iodine internally. When its constitutional action is indicated as in scrofulous or syphilitic diseases of the mouth more benefit will be derived from the use of iodide of potassium.<sup>1</sup>

#### IODIDE OF POTASSIUM.

Omitting its history, we will pass immediately to its physiological effects and uses.

“Locally, this salt is an irritant, but is not near so energetic in its action as free iodine. On this account it may be given internally, in larger doses and for a longer period, than iodine. Indeed, iodine can be introduced into the system much faster by the use of the iodide, than when given uncombined. A solution of albumen, fibrin, or gelatin, is not obviously changed by the addition of this salt, and as these are the most abundant organic constituents of the body, we

1. Watt's Dental Materia Medica.

may infer that the chemical action of iodide on the living tissue is but slight. To obtain a clear view of the action of this salt, as a remedial agent, it is necessary to bear in mind its peculiar properties. It is very soluble, and is, therefore, readily absorbed. It passes rapidly into the circulation, and may be detected in all the tissues and secretions. It is composed of two elements, both of which are characterized by strong affinities for other substances, and for some of them stronger than that by which they are held together.

If the salt is decomposed, the potassium takes oxygen and becomes potash, which is a general solvent of the animal tissues. At the same time the iodine is set free, and is thus able to exert its affinities. And as all chemical agents are peculiarly active in the nascent condition, the iodine and potash are both more energetic than if carried in their free state, to the point of action. Each one, as it were, holds the other quiet till the proper point is reached, and then lets it go, to accomplish its work. Each element by neutralizing the other prevents its local, *irritant* action, and each is liberated, atom by atom, in obedience to stronger affinities, each particle being promptly saturated, by the gratification of the affinity which liberates it. And this explains how it is that such large doses of this salt, can be taken for a long time, without local, or constitutional disturbance. The affinities of iodine and potassa are sufficient to account for all the phenomena, observed in the remedial action of the salt. Highly soluble compounds, are the natural results, and these are naturally carried out by the various excretories. Let us suppose that the iodide is administered for the arrest or removal of morbid growths, or to relieve tertiary syphilis. The latter is often spoken of as a disease of the bones. But does that expression convey the whole truth? Is there not a disease of the formative fluids from which bony tissue is deposited? Now, if these morbid particles are arrested, by the affinities of the elements of the salt, held in solution, and carried out through the various secretions, it is evident they will not further build up the morbid development. And as the particles of morbid structure, like those of normal tissues, perform their functions and pass away, unless new ones are furnished in their places, the abnormal solid is carried off little by little. The diseased growth is literally starved to death, and carried out by the scavengers of the system. It is this action of the remedy which has induced some writers to call it a resolvent, or liquefacient. In some of the above remarks, I

have sacrificed technicality, to a desire to be understood by beginners, and those whose opportunities have not been such as they desired. They are not written for the critic, though of course, he may use his pleasure in regard to them. It should be given in solution, and usually, immediately after eating. It may be taken in sweetened water, or almost any way the patient may fancy. The average dose is from 4 to 10 grains. Many use much larger doses, but I have not found it best to do so. For an adult, I frequently prescribe a solution of a drachm of the salt to an ounce of water, and direct the patient to take a teaspoonful three times a day."

#### BROMINE.

Bromine is a volatile liquid of a dark red color, when viewed in substance. Its taste is very caustic, and its smell very disagreeable, somewhat resembling chlorine. It evaporates rapidly, and is sparingly soluble in water, more so in alcohol, and still more in ether. It is valuable for its bleaching properties, and may be used for bleaching teeth, not so well, however, as chlorine, or chlorate of zinc. Bromine is intermediate in its effects between iodine and chlorine. It stimulates the sympathetic system, promotes absorption, and is supposed to be more energetic than iodine or bromide of mercury. It is recommended where iodine has been tried, and does not act with sufficient energy, or has lost its efficacy by habit. I am of opinion that bromine, like iodine, is not as efficacious as bromide of potassium. In case the patient has any syphilitic taint, bromine and bromide of potassium may advantageously be used. They may be used constitutionally or locally, either or both if thought best, for local treatment, make a saturated solution of bromide of potassium, then add 40 drops of bromine to each ounce of the solution, and apply to the affected part, always cleansing the part well before making the application. Apply this remedy in the same manner as creosote. For internal treatment take of bromide of potassium one scruple, distilled water one ounce, misce, and add bromine one scruple. Take a teaspoonful three times a day, one hour before or after each meal. This treatment is only to be used in cases of syphilitic taint.

When local treatment is applied through the canal, it should first be cleansed of all impurities, such as nerve membrane, or any foreign substance contained therein, and the root opened freely to allow a free use of the injection. In case the discharge be fetid, a solution of chloride of sodium should be injected into the cavity, to correct

this condition. After this, an injection of any of the above agents, may be used to break down the sac. The directions for the use of which see CREOSOTE.

Here let me remark, that the young and inexperienced may be easily deceived in their cure. Either of the local remedies used will soon impart a very healthy appearance, and often cause the external opening to heal almost immediately, causing the operator to think he has cured the disease, when really he has hardly checked it. It is frequently the case that the therapeutic treatment alone will not affect a cure, but surgical aid is required. In the treatment of abscess in the inferior Maxilla, there are serious difficulties, which are not met with in the superior. One is, the situation being at the bottom, instead of at the top of the socket, the secretions rest on the diseased parts, while in the superior it is drained off. The presence of this matter is a serious obstacle in the treatment of abscess unless it can be drained off and kept free. Again, the size and shape of the jaw, is such that an opening through the gums can not be well made. Therapeutic treatment, in cases of this kind, is not very efficient unless it be vigorous. The treatment of abscess in the inferior jaw is not generally so successful as that of the superior.

(TO BE CONTINUED.)

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#### NOTES FROM DENTAL PRACTICE.

FILLING TEETH.—Cavity in the grinding surface of a superior molar. Nature of Case.—Cavity crucial in form, the decay extending from a central cavity along the crown fissures very nearly to the approximal surfaces on the one hand, and to the buccal and palatine surfaces on the other—very thin walls remained between the decayed fissures, which terminated in acute angles, and at the surfaces named.

Preparation of Cavity.—By means of a cone-shaped drill the central cavity, from which the fissure cavities in the first place proceeded, was enlarged, and the sharp, irregular projections of enamel forming angles at the points of union, together with the overhanging portions, partly removed.

By means of enamel chisels, the fissure cavities were then enlarged for some distance from the central cavity towards their extremities.

When this was accomplished, a flat file, cut upon both sides, was applied by means of a file-carrier, first to the fissure extending very

nearly to the buccal surface, and the thin wall intervening wholly cut away, opening out this fissure cavity on the buccal surface to a depth corresponding to that of the portion of the same cavity near to the central cavity, and giving to it a width of about one and a-half lines. The opposite fissure, extending from the central cavity towards the palatine surface, was then enlarged in the same manner by means of the file, both as regards length, breadth and depth.

The file not being applicable to the fissures extending from the central cavity towards the approximal surfaces, on account of the presence of the adjoining teeth, enamel chisels were used to enlarge these fissure cavities to the same extent as were the fissure cavities extending towards the buccal and palatine surfaces, all the fissure cavities having, when prepared, perfectly parallel walls.

**Filling the Cavity.**—After carefully drying the cavity and protecting it from moisture by means of bibulous paper and napkins, the next step in the operation was the introduction of the gold—adhesive gold foil being used. Sheets and half sheets of the foil were formed into ropes from which pellets of different lengths were cut, and each pellet annealed previous to its introduction into the cavity. The first pellet, one of the largest size, was carried to the bottom of the fissure cavity extending towards the buccal surface, at its point of union with the central cavity. This pellet, owing to its size, when carried to the position named with the introducing plyers, and thoroughly condensed by means of mallet force, extended across the bottom of the fissure cavity and remained securely in place. Other pellets were then added to this and the bottom of the entire fissure covered, as far as the buccal surface of the tooth, the gold being built out a little beyond this surface for the purpose of properly finishing it. When this fissure was partly filled, the succeeding pellets were carried across the bottom of the central cavity, and from this cavity to the palatine fissure, which was partly filled in the same manner as the buccal fissure and central cavity. The gold was then introduced into the two approximal fissure cavities, anterior and posterior, and when these were partly filled, the operation of building towards the grinding surface was commenced and carried on until a sufficient quantity was introduced to completely fill the entire cavity, and restore the original form of the tooth.

*Treatment of Exposed Pulps.*—Nature of case.—The cavity of decay on the anterior approximal surface of the superior

second bicuspid tooth, the removal of the decomposed dentine exposing the pulp which was found to be in a perfectly healthy condition.

Treatment.—After carefully removing the carious portion and giving a proper form to the cavity for the retention of the filling, the next step in the operation was the protection of the pulp. For this purpose recourse was had to the oxy-chloride of zinc, which was prepared by combining the powdered oxide with the liquid chloride in the form of a thick paste.

These preparations of zinc should be of the best quality, and thoroughly mixed together, so as to form a paste which does not present a watery appearance upon the surface; care must also be observed that the paste does not commence to solidify before it is introduced.

In order that no time might be lost after the mixing of this paste to the proper consistency (as it rapidly hardens), the cavity was first dried, and then carefully protected from moisture by requesting the patient to keep the napkin in place about it with his fingers. The paste as soon as prepared was applied directly over the exposed pulp on a small piece of soft linen of a size corresponding to the bottom of the cavity, both surfaces of this piece of linen being coated with it.

After the introduction of the piece of linen, the cavity over it was completely filled with the paste, and this temporary filling protected from moisture for about twenty minutes, this time being necessary for the proper hardening of the material. The surface of the filling was then made smooth with a burnisher, and to protect it for a still longer time from moisture, was [painted over with a coating of sandarach varnish. Collodion also answers a good purpose for thus protecting the surface; these directions applying more especially to temporary fillings of these preparations of zinc, which are intended to remain in the teeth for some months.

An engagement was then made with the patient for the following week at which time it was determined to permanently fill the tooth should no untoward symptoms arise.

The tooth remaining perfectly quiet from the time the temporary filling was introduced, until that of the second engagement, the method pursued was as follows: All of the temporary filling, composed of the oxy-chloride of zinc was removed, except that portion of it covering the bottom of the cavity, and immediately over the pulp, care being taken not to cut through this or in any way to injure it. When this was accomplished a gold filling was introduced by hand-pressure (as

it was deemed unadvisable to use mallet-force in this instance), and the cavity thus permanently secured.

The application of the paste to the exposed surface of the pulp at the time of the introduction of the temporary filling, was followed by some pain, which, however, soon subsided.

This treatment of and exposed pulp, only promises success in cases where the organ is in a perfectly healthy condition, free from inflammation, or injury occurring in removing the decay. Where the proposed pulp is in a state of irritation palliative treatment should first be resorted to, and that above described be pursued when the former has proved successful.—*American Journal of Dental Science.*

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## CORRESPONDENCE.

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*To the Editor of the Canada Journal of Dental Science.*

SIR,—I am informed that a short time ago, a brother practitioner was subpoenaed in a Division Court to give professional evidence. Having the interest of the profession at heart, he claimed to be entitled to the same witness fee of four dollars as every other professional man. He stated that by an act of Parliament dentistry was acknowledged as a profession, and that dentists were simply specialists. The judge said he could find no authority for allowing a professional witness fee, and as for the specialty, a whitewasher was a specialist also.

Those who live and come in contact only with such of our professional brethren, as strive to elevate it in public esteem, will be both surprised and indignant at the remarks of the judge, that dentists and whitewashers should be put on a par. But those who live in localities where *Doctors*, being compelled to take in their show cases resort to the following mode of advertisement, in order to attract public attention, cannot wonder that dentists do not hold that professional position to which so many of them are justly entitled.

The advertisement is after the style of the hot-meals-at-all-hours notices, which one sometimes sees outside the huckster shops in country towns, and is thus constituted:—Take a large packing-case, place it on the outside of the sidewalk, on it place a moveable triangle, made of a wooden frame, size 36x30, covered with three posters of the same dimensions, on which posters the public are informed that the *Doctor*, opposite whose office door the attractive advertisement stands, “is

prepared to extract teeth without pain every day by the administration of nitrous oxide gas." The *Doctor* who resorts to this mode of advertising, is the same individual to whom I referred in a communication which appeared in the Canada Journal of Dental Science, March last.

Can nothing be done to compel those who are among us, but not of us, to behave in their professional capacity in a manner becoming a professional man and a gentleman? Can the Union Dental Association of Ontario (of which he is a member,) not adopt some resolution excluding from membership any one who resorts to any other than respectable professional advertisement, namely, newspaper advertisement, circulars and business cards?

Trusting that you will pardon me for encroaching so much on your space,

I remain truly yours,

C. C.

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#### DENTAL EDUCATION.

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*Mr. Editor:*

In the May number of "The Canada Journal of Dental Science" is published an article under the head of "The Proposed Dental College," which is calculated to retard advancement, and forces me to ask wheather *we*, as dentists, wish to grope along in the dark—not even having learned the rudiments of our calling? Or are we determined to become an educated body, worthy to be called a profession, ranking in importance with other specialties of the healing art?

If the former, by all means let us pursue our present course; but if we aspire to the latter, let us unite as a band of brothers, determined to further every object tending to place it in the coveted ranks. After receiving replies to a number of communications, I feel convinced that the great majority are dissatisfied with the present status of dentistry, which necessitates our considering the necessary steps to ensure its elevation.

We already have two of the most important means of education, viz: a "Dental Journal" and a Dental Association, but they do not obviate the necessity of a Dental School; where practitioners and students can be grounded in the rudiments of a profession, elevating them at once above the "Dentist's Trade." But it is said that those who have obtained licenses to practice will not seek further instruction, which is in reality not a serious objection, because a few educa-

ted students will soon force incompetent practitioners either into a respectable position, or out of the profession, which will be a God-send to the patients upon whom they were destined to elaborate their ignorance; but says another there are already too many in the *business*, which is certainly true, but as soon as it becomes a respectable profession there will be room and to spare. The most common objection is lack of funds to carry out a collegiate course of instructions, a difficulty with which it is probable every dental college in America has had to contend, which obstruction can be overcome by associated effort; then let us go to work unitedly, and a school can be organized and carried out successfully; although it may not be equal to some of its predecessors on this continent, yet vastly superior to our present system of "apprenticeship." Then let us rally round a common standard, having "progress" for our watchword, willing to throw *aside party* prejudices, and consider personal animosities errors of the past.

I do not suppose a corps of professors can be found in the dental ranks qualified to fill all positions required in a college, but there are medical schools where it is probable instructions in Anatomy, Physiology, Chemistry &c., can be obtained, leaving only the branches more intimately connected with our specialty to be taught, and if there cannot be any better means devised by which to supply such instructions, let all practitioners interested meet together and make arrangements to each give a certain amount of instructions, so arranged as to fill up the course, and cover the field of *our* specialty, when it could be ascertained who are qualified to give instructions; for teachers are born not artificially prepared.

It has been remarked that eight or ten years hence will be soon enough to think of establishing a college, by which time many of us will have ceased from our earthly toils, no longer permitted to disgrace a respectable calling; then let us not dodge our responsibility, but work while it is to-day and our efforts will be crowned with success, so that when sooner or later our Maker bids us lay aside our mortal bodies, we shall be enabled to transfer our drills and excavators, to hands guided by intelligence *equal* if not *superior* to our own.

Cobourg, July, 1869.

THOS. ROWE

#### THE PROPOSED DENTAL COLLEGE.

*Mr. Editor:*—Having perused Dr. Nelles' letter on the above subject, in the May number of the Journal, I am induced to correct an

impression which seems to be current, to the effect that the promoters of the college are desirous of bringing a great number of young men into the profession to the injury of practitioners. As far as my knowledge on the point goes, this is not the case. Previous to the last examination there were probably three unlicensed to one licensed practitioner.

The legislature is extremely liberal towards young practitioners, whose opportunities have been limited. It was only by the greatest effort that the provision requiring an examination, could be made to bear upon any in practice at the time of the passing of the Act. In the several States that have secured legislation on the subject, all in practice are allowed to continue. In this respect our Act is in advance of any yet passed. In order to get the clause passed, the committee of the Legislature were referred to the clauses providing for the instruction of any who were not already qualified to pass their examination, and given to understand that the licensed practitioners would be only too glad to assist in establishing a school of instruction for their benefit.

Another obstacle in the way seems to be that many seem to think if instruction is afforded in a college, students will not be so likely to remain in the office of practitioners. The Bill requires that students shall remain two years articulated, and the By-Laws of the Board provide that they shall devote their *whole time* to acquiring a knowledge of the profession, before they shall be eligible for examination, and must be certified by their preceptors as to their having faithfully performed their part of the contract. In the office, the preceptor has but little time to instruct, except in the practical portions of the art. The *Science* of Dentistry must be learned from text books and other sources. The advantage of lectures upon Chemistry, Anatomy, Materia Medica including Botany, Surgery, and Medicine, can be secured without any expense to the Board. Dr. Geo. L. Elliot who was formerly a student of the Toronto School of Medicine, requested the writer to call with him upon Dr. Aitkins, Dean of the Faculty of that institution, when we were told that the facilities of that school would be at our disposal. Through the influence of Prof. Berryman, students were placed upon the same footing as those of Medicine in the Medical Department of Victoria University. The allusion to the Board's having "been pleased to recognise the *present* qualifications of the class of persons alluded to" is not correct. The gentlemen who

passed at the last examination, exhibited a fair knowledge of the profession and many of them have seen more years in the profession than either Dr. Nelles or the writer. In one instance a man of fifteen years practice was examined, because he had not happened to live the last five years in Canada.

Over a hundred practising Dentists yet remain in Ontario, without license. It is fair to suppose that the better qualified presented themselves first, this balance have yet to be qualified or rejected. No one thinks of "*Manufacturing Dentists Wholesale*." Provision should be made to qualify those in the profession practically although now not recognised. Some may think the estimate of one hundred too high, but the writer has compiled his list not from directories but from other sources.

With regard to three indispensable requisites for a Dental College Laboratory, Infirmary and Dissecting Room, the first should be established as soon as possible. In the mean time it can be supplied principally by Dentists practising in Toronto, to which donations would be contributed by manufacturers. The Dissecting rooms of the Medical schools are already secured.

An infirmary can be established in connection with the city dispensary or the Hospital, as in England. The Infirmary patients are poor and would pay nothing to an established office. A little management can prevent any injustice to city practitioners.

The writer is not on the committee referred to, but has had the privilege of visiting more than one Dental College and is fully satisfied that if the profession will sustain the resident practitioners of Toronto by their influence, an institution can be reared there, that will be of service and a credit to the profession, not for "*Manufacturing Dentists Wholesale*" but for the purpose of assisting Licentiates in raising the standard of qualification.

Very few of the unlicensed practitioners are able to attend lectures in any of the American Colleges. It will be better to assist them to qualify than to have them to pursue their practice unlawfully to the great injury of licensed and established practitioners.

J. S. SCOTT.

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## EDITORIAL.

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VOLUME ONE.—NUMBER TWELVE.

The pleasure with which the editors of this Journal survey the

completion of the first volume, is one in which any laborer can share, who has commenced a labor of difficulty but one of love, and brought it to a successful end. When the "*Canada Journal of Dental Science*" was started, there were prophecies of failure as well as promises of success; cold water thrown upon it as well as genuine sympathy bestowed. Some whose encouragement would have given it a great lift, feared to associate themselves with a possible bubble that might burst; many feared to subscribe lest they might lose their money; and out of the first numbers sent gratis to every Dentist in Canada, the reasons for not subscribing were the most frequent returns, and even congratulations were more numerous than remittances. This was expected, and therefore we were not disappointed. A great deal of heart and some money had been put into the enterprise, and come weal or woe, we were fully determined that the Journal should not die until it expired in its twelfth number. There was no desire for gain; no axe to grind; no other wish than to give the profession a Journal. No one was asked to invest a cent. Confidence was gradually established; and "certain circumstances" leading us to believe that a transfer to the upper Province would be the best introduction to the Dentists of that Province, we sent it westward in direct opposition to our most cherished desires, for, not to mince the matter, we enjoyed the work. The result of the transfer, and the new editorial partnership has *made* the Journal, and we believe that entire confidence in it is now established, and that our friends would not willingly let it die.

The beginning of the Dental literature of Canada dates from this Journal. The history of the Dental movement is written in its pages. Where could we point to the literature of the Canadian profession until its establishment? When one had a communication to make, or when the proceedings of Dental meetings had to be published, the only means of communication were special pamphlets, which were no inconsiderable cost, or the pages of a Foreign Journal. There was no fair opportunity to develop our home talent; and though appreciating the liberality of the American Dental Journals, it was not to be expected that they could lend their pages largely to the interest of the Canadian profession. We can point with pleasure to the good, direct and indirect, already accomplished in Canada through the agency of this Journal; we see it in our cities, towns and villages; in a higher tone and dignity; in the abolishment of some quackery, and

the certainty of constant warfare against the various disreputable means of gaining a practice. Moreover, it is seen in the interchange of thought, and the increased liberality and generosity of mind, which hides not its talents under a bushel, but freely gives and freely receives.

We appeal to the profession at large in Canada for their renewed support. Nothing is more encouraging than the promptitude which remits without delay, and the thoughtfulness which contributes its quota in the way of contributions. We appeal to the Profession to rally round the nucleus of our Canadian Dental literature.

W. G. B.

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#### IMPORTANT BUSINESS BEFORE THE BOARD AND ASSOCIATION.

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On Tuesday next, the 20th inst., the Board of Directors and Examiners of the Royal College of Dental Surgeons is to meet for the purpose of granting licenses to a number of dentists under the "five years" clause of the Act, and of examining quite a large class of young practitioners who have signified their intention of coming before the Board for that purpose. As some little feeling has been manifested by members of the profession outside of the Board, because certain parties obtained licenses, when they did not think that their qualifications were sufficiently high to entitle them to a license, we understand that it is the unanimous decision of the members of the Board, that the examinations shall be much more rigid at this, than at any previous session. The matter of opening a Dental School will be brought under the consideration of the Board, but, we hope that there will be no *final decision* in the matter until after the meeting of the Association on the 27th. The Board is empowered by the Act to open such a school, but, that body is composed of but twelve of the two hundred or more members of the profession in Ontario, and is, moreover, liable to be changed entirely, at the election on the 2nd of June next, for which reason we think that some plan should be adopted, by which the question can be discussed by *all* the members at Belleville. We have received a good many private letters on the subject both for and against the college, and one from Dr. Nelles in opposition to it, which we published in the May number, and one each from Drs. Scott and Rowe, for which we most cheerfully make room in this number. We hope they will be

read with careful attention by all, as it is of the utmost importance that the matter should be thoroughly understood.

We have purposely abstained from expressing any opinion on the subject, hoping that sufficient interest would be felt by those outside the Board, to give the matter a thorough "ventilation." As we said before the Association is to meet on the 27th, and as there are several matters of very great importance to the interests of each and every dentist in the Province, we hope that as many as can possibly do so, will be present.

C. S. C.

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#### PROSPECTUS FOR VOLUME NO. 2.

As the next issue of this Journal will be the commencement of the second Volume, we deem it desirable to review its past career, as well as future prospects, and renew our vows as editorial guardians of the interests of the profession in the Dominion of Canada; and to ask the sympathy of our brethren, not merely by wishing us well, but by giving us substantial aid in contributions, in individual effort to increase the circulation of the Journal, and above all in supplying us with the *needful*, by paying subscription fees promptly. From the time that an associated effort was made to elevate the profession in Canada, it has been felt that a native Journal, devoted to the various interests of the profession was needed. With a laudable ambition and enterprise, which the profession ought ever to hold in grateful remembrance, the publication of the Canada Journal of Dental Science was commenced in the city of Montreal, the first number of which made its appearance in June, 1868. The difficulties the pioneer had to encounter were not trifling. It was something new in this country, some threw cold water on the attempt, others openly doubted its success, it entailed a considerable amount of labor and expense on the proprietor, and above all the dissatisfaction that prevailed in Ontario at the publication of a journal out of the Province from which it received its greatest support. These with some other causes led to its suspension for a few numbers. At the Convention in Toronto last winter, the profession cordially came forward and promised the present proprietors their support, if they would continue the publication of the Journal. They have done so and filled the contract of the original proprietor, by completing the first Volume. We have spent both time and money, and endeavoured to carry out our programme as laid down in a former article of the Journal, under

the head of "Our Mission." We have reason to believe that we have not failed in our undertaking, having had many kind expressions of approval from the profession and press both here and in the United States.

Our work has been a labor of love. As we expected, we have made no money, but have the satisfaction of believing that in the circulation of the Journal monthly, we have been the means of imparting some useful practical knowledge, as well as elevating the professional sentiment of the dentists of this country. Our motto will be as it has been, the weal of the profession. With more extended connections, and a large augmentation to our stock of dental literature, we expect to be in a position to give our readers the benefit of all the new and best ideas that may be promulgated in the dental world. Having done all that was in our power to provide the profession with a useful native Journal, and being still determined to continue our efforts, we think that we have a strong claim for the sympathy and co-operation of every member of the profession. We feel that we have not received that literary assistance from our brethren that we might reasonably have expected. We have had but very few communications from Canadian practitioners, many of whom are efficient and experienced. This is hardly fair to us, or patriotic, and is not as it should be. Whatever effort we may make to provide useful and interesting matter for the Journal, the writing of only two or three, will, to a greater or less extent become monotonous. We require productions from every member of the profession who can give anything new or reliable.

We have decided to reduce the price of subscription to \$2.00, which will make this one of the cheapest, if not the cheapest Dental Journal published, consequently none need refuse to subscribe on the grounds of expense.

EDITORS AND PROPRIETORS.

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#### HOW OUR DRILL SERGEANT DREW A KAFFIR'S TOOTH

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At the time of the Fenian raid in 1866, we were thirsting for Fenian blood in the Victoria Rifles, on the Huntingdon Frontier P. Q; and among our reminiscences of that campaign we will always keep green in our memory the inexhaustible story teller, Sergeant Fitzpatrick, the attached drill sergeant of our corps, an old soldier of

H. M., foot. Fitz was in his glory with "a wee drop of the cra-thur" before him, and an attentive audience around; and if the "Vics" in any tent were cross and grumpy because the rain would'n't stop, or what disappointed them most of all, because the Finnegan's would'n't come, Fitz was on hand with an appropriate story to dissipate their blues. One day we were lying in our tent, when in came Fitz and among a string of stories he told one which may be of interest to the readers of the Journal.

When Fitz's regiment was in Africa, he one day came across a Kaffir suffering with an agonizing tooth ache; a lower bicuspid; nerve exposed. Fitz had before extracted upper teeth on the principle of fastening a string to a door, or bed post, and then pushing a hot poker in the face of the waiting patient, who, jumping back in alarm, would extract his own tooth; but he was in a puzzle how to draw this lower bicuspid without breaking it off. The Kaffir was averse to a fair pull; so our sergeant persuaded him to mount a tree; tied a strong string around the tooth, and from the tooth around a projecting branch of the tree. He then made the native sit on the branch, and when all was ready, he gave the poor beggar a push, and as the Kaffir went down, the tooth came up. The complete success of the operation was only prevented by the string, which dreadfully lacerated the mouth and face, as the Kaffir fell forward. Fitz was court-martialed for his ingenuity, and got three days close confinement.

W. G. B.

See the advertisement of Chandler's Canadian Dental Depot, on the second page of the cover of this number.

VERY BENEVOLENT.—The following is an advertisement of a quack Dentist in the Western States. "Dr. P——, dentist, having once more opened an office in B—— will perform all operations on the teeth at greatly reduced prices. A beautiful silver cup will be presented to the person having the greatest number of teeth extracted, and a splendid gold watch and charms to the one having the first set of artificial teeth inserted. Teeth extracted for a dollar a dozen." How degrading is such an advertisement to the profession? Gentlemen, do for pity's sake spare egotism and quackery in advertisements as well as practice.

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VOL. II.]

AUGUST, 1869.

[No. 1.

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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ON CARBOLIC ACID IN CONNECTION WITH DEVITALIZATION OF THE  
PULP.

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BY W. H. WAITE, D. D. S.

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The prime essential, for obtaining painless devitalization, is doubtless, to have complete exposure of the pulp tissue, so that the destroying agent, may come into absolute contact therewith.

If arsenious acid be used, the next point of importance is to combine with it some powerful obtunder of sensibility, hence, the employment of morphia, creosote, &c. The most successful form of this mixture that I have ever tried is that recommended by Dr. Flagg, of Philadelphia, viz :

Arsenious Acid, 1 part.

Acetate of Morphia, 2 parts.

Creosote, q. s., to make a stiff paste.

When there has been but little previous inflammation of the pulp, this paste gives very little pain, if thoroughly applied, but during the past two years, I have found the number of successful *painless* cases largely increased by the use of pure carbolic acid, as follows.

The acid is obtained in a crystalline state and liquified by slightly warming the bottle over a spirit lamp, while liquid add a few drops of spirits of wine, which will keep it liquid in any ordinary temperature. Having exposed the pulp, and dried out the cavity with a little bibulous paper, I take a portion of cotton, on the probe, and dip

it in the carbolic acid, then with a small excavator, smear on the saturated cotton a small bit of the arsenious paste. In applying to the pulp, care should be taken, not to allow the cotton to touch the lips or cheek or gums, and it should be so introduced as that the paste shall come directly in contact with the pulp. These conditions fulfilled, the cavity is sealed with cotton and sandarach, and as a rule, left for a week, before any further operation. I am aware that some operators proceed to extirpation in twenty-four hours after making the arsenious application, but personal experience (in all cases the safest guide) must determine for each individual practitioner, this, among many other matters of practical detail.

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### DENTAL BROTHERHOOD.

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BY H. W. BRANSCOMBE, PICTON, ONT.

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*Read before the Ontario Dental Society, at Bellville, July 21st, 1869.*

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MR. PRESIDENT, AND GENTLEMEN:—There is an old nursery rhyme, familiar, no doubt, to you all, that has been ringing through my head since receiving our Secretary's invitation to prepare something for the general good of our Society. It begins thus:—

"Will you walk into my parlor,  
Said the spider to the fly—"

I feel to sympathise deeply with the poor fly, which found itself placed in such an unfavorable predicament by simply accepting the polite invitation; however, I can only hope that my fate may not prove quite so disastrous, and that I may not be altogether "gobbled up" by your superior talents and experience.

In attempting to address you for the first time, I have chosen the subject of "Dental Brotherhood," not from necessity, but from choice, as no one of our numbers—to my knowledge—has heretofore touched upon it. I have long felt it necessary that something should be said to draw our attention to this important question. There are many practical subjects which I might have taken up, but am quite willing to leave their notice and discussion to older heads.

Others may not be so unfortunate as I am in composition. I acknowledge it, at any time, an unwelcome task; and I think you will all agree with me, that no one has an idea, but he who has made the trial, what an effort it is to take up, and transfer to paper, the most trifling subjects. But, if we have a proper regard for ourselves,

as dentists, and desire to keep up and give character to these meetings, we must, every one, come with our heads and hands full of Dental Science—unless we do so, our meetings will prove decided failures. I, for one, do not wish to come here to hear myself talk, but I am not going to keep silent because I expect my friend Dr. so and so, or Dr. somebody else, to follow with a better production, or that I fear having my poor attempt criticized and picked to pieces. Exercise of mind is just as necessary for its proper development as that of the muscles, when we wish to become, physically, giants. I know you will endorse, with me, the idea, that if we are ignorant, the sooner we are made aware of it the better; however, I feel quite certain of the charitable sympathy of my Dental Brothers to-day, and that they will make all due allowance for the imperfections of this paper, as *some* of you, at least, must have experienced how much easier it is to work *at* another's mouth than *with* your own.

The remarks I am about to make on Dental Brotherhood, to this Association of Dentists, would not, I think be necessary, could I, by any means, induce you to visit our beautiful town of Picton, and sojourn with us awhile, for there you would get a practical idea of the subject. We have three dental offices, but often you would find one office containing the three dentists consulting together, as only good friends can, and from the experience of each other getting better prepared for whatever difficult operations we may be required to perform. This is as it should be, but I am very sorry to find that it is not the case with all the members of our profession, although there is a far better feeling at present than ever existed before. Of course there always have been, and always will be, in every profession, men who imagine themselves Samsons in intellect and ability, seeming to consider it a confession of ignorance, or something like an acknowledgment of inferiority to consult with their brethren.

Believers in the science of Phrenology might say "this cannot be helped, it is all owing to the shape of their *cranniums*." We do not intend to argue this question, being aware that these *bumps*, *protruberances*, or whatever you may call them, are hard pieces of furniture to move. But I imagine the cause of this disagreement lies deeper, though it may be easier remedied. Is it not that we are scarcely careful enough of each other's professional honor, that we think by depreciating a brother's talents or work to enhance our own? Are such instances rare? I fear not! What is there grander, or more

elevated in the universe than this idea of Brotherhood? I think it must be a poor soul, not worthy the name of *man*, whose pulses do not throb with a nobler thrill, at the very thought, *we are brothers all!* Could we but feel this every day, not only when met together in our Association, where, surrounded by animated faces, it seems easy to believe each a brother, working for a brothers weal; but if we could carry this idea with us in the every day work of life, to what far greater heights could we not hope to raise our profession? This we can only accomplish by the continued, *united* effort of each individual member of the society. It is an old saying, but no less true for being old, that "Union is strength." Let us endeavor to prove this by being united as one man in all the interests that pertain to the general good of our professional calling.

To my younger brothers in the profession I would say, do not imagine you know everything yet, nor feel too proud to consult with others. Learn all you can, in every way possible, and then try and impart your knowledge to your brother dentists, believing that you thus lend to the profession that which will be repaid with 100 per cent! And you will thus have the proud assurance of doing something towards the advancement of our noble work. My friends whose heads have grown grey in the profession will bear me witness that we are never too old to learn.

Mr. President, do not think that I imagine myself superior to these natural feelings of human weakness, for I must confess that at the beginning of my professional career I used to think all dentists my enemies; but I am very happy to say things are very different now; and I feel and believe a brother dentist *my best friend*.—Whether the change is in others or myself, I leave you to judge. My impression is that it is because we are all beginning to feel the importance of this subject of Dental Brotherhood; and here I must record my belief in the great good our Society is doing in this respect, as well as others. Associated effort must soon rub the angles from our minds, and show us the boundless advantages of Dental Associations. It will serve to promote friendly intercourse among us, and inspire each with professional pride, a laudable zeal, and earnest desire to press forward, and improve and excel in our dental manipulations. Gentlemen, it deserves, and should receive our hearty co-operation. It has already done much to break down the barriers of selfishness and secret methods of practice among dentists, and is fast doing away with the unwillingness to impart to others in the

profession what knowledge we may possess individually, which was formerly a serious obstacle to the progress of our art, and proficiency in its practice. And who can calculate the great good it is doing to mankind in reforming the low standard of professional competency which formerly existed, and which, we are sorry to be obliged to admit, still exists in too many instances.

"Why are we here? What unseen motives sway?  
 Why darts from eye to eye the electric ray?  
 What moves in unison this associated heart?  
 And why so eager each to get his part?  
 Good angels surely must our minds inspire;  
 How else this ardent wish, this fond desire?  
 To grow in knowledge, and the truth believe,  
 As happy to *impart* as to *receive*;  
 Why are they here, the grey beard and the youth?  
 The unseen motive what? 'Tis only *truth*;  
 The electric fire a joyful message sends,  
 And each and all are eager to be *friends*."

But if we would reap the greatest possible benefit from this, and kindred associations, we must each one work, casting all petty differences and unworthy envyings behind us to the dark past, where they properly belong. I am very sorry our American brethren are not represented here, to whose example in dental progress we are so much indebted. Personally I feel under great obligations to them for the knowledge and experience gained during my four year's practice in one of their principal cities, and would give them a hearty welcome to our young society, in return for the many courtesies received in the pleasant meetings of the Brooklyn Dental Association.

I am sure I am only expressing the wish of each present when I say, in the words of Sacred Writ, "Let brotherly love continue." Then will we see our Association on this side of the water, and on the other, fixed and firm upon a foundation where it must immovably repose until dentistry shall cease to be regarded as a professson.

Honest and untiring efforts for our brother's good, and the success of our common cause, will gain the blessed reward of accomplishing such results as will give our names to be recorded on the corridors of time, where they will be read and honored by all good and true men who pass that way to eternity.

#### THE DUTY OF DENTISTS TOWARDS PARENTS IN REFERENCE TO CHILDREN

BY CHARLES A. MONDELET, L. D. S., OTTAWA, ONT.

To the miserly, skin-flint dentist, who, rather than loose his fee of

fifty cents, will extract a child's tooth two years too early, and thus entail upon the unhappy subject of his malpractice, pain and deformity, these lines will come most obnoxiously ; but to him who, being a dentist, does not forget that he is also a man, and who does not cease to remember that to alleviate pain is the true destiny of his calling, and that his recompense is only secondary, they will perhaps carry something of the intention with which they are written. With this belief, I proceed to examine into the merits of my subject, "The duty of dentists towards parents in reference to children."

It is not only the duty, but the true interest of every dentist to, as far as possible, educate his patients to perform properly their own part in reference to their teeth and those of children placed under their care. Every practicing dentist will bear witness that the profession receives more trouble, and more really laborious and disagreeable tasks, from patients who are entirely and (may I say?) criminally ignorant of the first principles of human physiology and anatomy, than from those who have a good general idea of how they are formed, and know when an operation upon the teeth is really needed, and will not insist upon its performance when not necessary. Such persons having charge of children are careful to watch the formation and growth of their teeth, and at the proper time to bring them before the professional dentist for examination, and, if necessary for operation ; while they have no whims as to the imminent necessity that every tooth should be extracted the moment it aches ; and so they relieve the dentist from all external annoyance, leaving him to use his own judgment and care in the case.

They should be made to understand that the regular and proper development of the permanent teeth depends somewhat upon proper care being taken of the temporary set ; they should be told that of the temporary teeth, there are four incisors, two cuspidati, and four molars in each jaw ; which are finally replaced by the permanent set, beginning at the sixth year and continuing until the fourteenth year, when the permanent set is complete, with the exception of the *dentes sapientiæ* which appear between the eighteenth and fortieth year.

It will then become necessary to explain and instruct as to the manner in which the permanent set succeeds the temporary ; they must be told that the germs of the permanent teeth are situated under the temporary, and in the process of their growth constant absorption is taking place, until the roots of the temporary have been entirely absorbed, the permanent teeth meanwhile steadily fol-

lowing the temporary until the latter are finally driven out of the gums, by the process of shedding, as it is called, and their places are taken by the permanent teeth.

The first permanent teeth which appear, are the sixth year molars, which are so frequently mistaken for a portion of the temporary set, and such unhappy consequences sometimes result from this error, that the attention of those having the care of children should be particularly directed to this point. These teeth are very often permitted to go to decay from want of care, and under the impression that they are the temporary teeth, and only following their proper course. Sometimes they are even extracted for some slight cause, when the whole arch of the jaw becomes imperfectly developed, and the most painful and tedious cases of irregularity are often the result. These teeth are the pioneers and guides of the new set, they stand as landmarks in the jaw, and their extraction or loss by any means may be compared to the capture of the outlying picket of a sleeping army, in disastrous consequences. Another point is worth notice : these teeth seem to be placed in the exact position where they are most needed, as the temporary teeth are falling out, and the office of mastication must be performed somehow, and falls naturally upon these powerful grinders, so admirably placed to perform their allotted labour. It will of course be readily seen upon consideration, that the breadth of the jaw which is quite sufficient for ten teeth, would not at all suffice for sixteen ; and nature has provided for this important deficiency in the following manner. At about the third year, a change in the form and dimensions of the jaw begins to take place, which affects the appearance and expression of the whole countenance ; from that age until the completion of the permanent set, that portion of the jaw finally occupied by the permanent molars gradually lengthens, thus giving room for the increase in number of the permanent over the temporary set.

Let the honest dentist impress upon the minds of the parent, that the first, last and greatest rule for the preservation of the teeth is *cleanliness, cleanliness, cleanliness ! !*

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#### INFLAMMATION.

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BX W. C. BARRETT, WARSAW, N. Y.

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(Continued from page 327.)

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I said in my last article, that when inflammation has reached the

point at which lymph is deposited, it is called the adhesive stage. This is the reparative, the building up point. It is only by the action of inflammation that the deposition of lymph is excited, and it is only by, or through this agent, that restoration or healing goes on, for it is out of lymph that tissue cells are formed. There is at this stage of inflammation, an extravasation of lymph as there is in the first stage a flow of mucus or serum, according to whether it be mucus or serous membrane that may be affected. If then it play such an important part in the cure of diseases, how important that its pathology be understood.

Coagulable lymph is poured out in a semi-fluid condition, being mixed more or less with serum, but the fluid parts being soon absorbed it becomes more solid in its character, and not unfrequently seriously embarrasses the physician or surgeon by its too profuse deposition. Thus the central portion of a phlegma in its first stages owes its hardness to the presence of coagulable lymph. So too in hepatization of the lungs, the air cells are filled up with solidified lymph. Unless its depositions be normal in character, and not too profuse in quantity, it may be the cause of a fresh complication of difficulties.

The deposition of lymph, or fibrin, may be prevented either by too great violence or too long continuance of the inflammation, by the impairment of the general health, or by congestion of the part itself. The lymph too, may pass into the fibro-cellular state and development proceed no farther. This fibro-cellular tissue so formed, is that which connects the walls of wounds, and is the tissue of which cicatrices, false membranes, thickenings and adhesions, are composed.

But if all the conditions are favourable and lymph is deposited, it begins to undergo development and by regular gradation reaches the point at which it becomes living tissue. Blood vessels are soon formed in the deposited fibrin, whether by development or extension it matters not, and by regular cellular formation, reparation goes on. It is not possible within the limits of this article to speak at any great length of the supposed manner of the formation of tissue cells, nor would it be advisable if such were the case. Suffice it to say that it is by regular gradation, of the growth or development of one cell added to another, and their successive virification, that the waste places are built up, and the devastation made by disease, obliterated.

When, however, the pouring out of lymph is arrested, that which has already been deposited may be absorbed. We take advantage of

this when we excite local inflammation in any opacity that it may be obliterated.

The deposition of lymph being governed by the inflammation, it is important that the operator be able to control its action, for if it be not stayed in time, but continue, it soon passes that point at which lymph is deposited, and reaches the suppurative stage, which is that form of inflammation that gives rise to the production of pus. This exhibits considerable rarity of appearance, according to the condition of the patient or the part affected. When found in a person of healthy condition, it is usually a creamy fluid, thick, and slightly glutinous, or of a yellowish white color with a greenish tinge. Chemically it is composed of water containing albumen, fibrine, saline, and fatty matters. This is healthy or laudable pus. When tinged with blood, it is called sanious; and when thin watery and acrid, ichorous; when it has floating in it, white flaky matter it is said to be curdy; and when mixed with mucus or serum it is muco or sero-pus. Pus presents many other peculiarities, as being sometimes contagious, sometimes fetid, and sometimes containing animalcules. Under the microscope, pus is found to consist of corpuscles floating in a fluid. These corpuscles seem to be modifications of exudation cells, broken down and disintegrated tissue. The fluid in which they float seems to be a kind of serum. Laudable pus would seem to be an abortive effort of nature to repair a waste. Lymph is deposited but from too great a degree of inflammation, or from its too long continuance, or perhaps not sufficient vitality in the patient, the exudation cells are not completed, or if completed are not virified, but being thrown off are disintegrated, or left to float in the serous humors deposited as the result of the inflammation. More plasma is secreted in which there is the same lack of development, the same disintegration and change into pus corpuscles, and so the work goes on.

When pus is formed upon an exposed surface, it is called a purulent secretion, but when in the substance of tissue it is an *abscess*.

Inflammation from some cause exists in the midst of tissue. It reaches the first stage and all the tissue in the vicinity is infiltrated with a deposition of lymph, forming an opacity of perhaps considerable size. Now if this be caused by a wound that ruptures the tissue, this lymph is needed that it may be developed into tissue cells, and the wound be healed. But perhaps a single cell in the process of development comes in contact with a part of the too highly inflamed tissue. A period is put to the process of development, and it comes

forth an abortive attempt of vitality—a pus-cell. Another cell in immediate contact goes through the same process, and thus a drop of pus is formed in the centre of the matter exuded. Around this drop, lymph is still deposited, and forms a solid mass infiltrating the tissue, and filling up all interstices, and should be made to play an important part in staying the further spread of the suppuration. But if it be not stopped the corpuscles nearest the drop of pus and forming the innermost particles of the mass, in turn degenerate into pus cells, and so the abscess is formed, and always in a healthy system is retained by the wall of consolidated lymph which feeds the abscess and is again reinforced by fresh depositions. This boundary of lymph has been called the “pyogenic membrane” and has been supposed by many to be a membrane secreting pus. It is, however, but the boundary line between pus-corpuscles and lymph, and which may be ever changing. That it is not a secreting surface is proved by the fact that it is not formed in the earlier stages of the disease, and is always wholly wanting in purulent secretions on the surface, and surely if a pus secreting membrane is needed in the one case, it is in the other. The fact seems to be that pus is not a secretion at all. It is broken down, degenerate attempts at the formation of tissue cells.

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#### ROYAL COLLEGE OF DENTAL SURGEONS.

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The regular meeting of the Board of Directors and Examiners commenced at the Queen's Hotel, on Tuesday, at 10 a.m.

The following members were present: B. W. Day, M. D., L. D. S., President; J. O'Donnell, L. D. S., Secretary; C. S. Chittenden, L. D. S., Treasurer; H. T. Wood, L. D. S., Registrar; G. V. N. Relyea, L. D. S.; J. L. Elliot, L. D. S.; F. G. Callender, L. D. S.; J. B. Meacham, L. D. S.; Chas. Kahn, L. D. S.; A. D. Lalonde, L. D. S.

The minutes of the last meeting were read, and on motion confirmed.

The following Dentists, having furnished proof of having been engaged for five years previous to the passing of the Act, were granted licenses:—J. A. Burns, St. Thomas; D. F. Hayes, Brockville; J. G. Bull, Newburg; J. Yemen, Mitchell; Geo. W. Hale, Toronto; O. Martin, and C. A. Martin, Ottawa; J. D. Cottingham, Borillia.

A number of applications for license under the five years part of the Act were sent for examination. The following gentlemen were

appointed to conduct the examination :—Dr. Day, Anatomy ; Dr. Scott, Chemistry ; Messrs. Callender and Chittenden, Operative Dentistry ; Messrs. Relyea and Meacham, Mechanical Dentistry ; Messrs. O'Donnell and Wood, Surgery ; Messrs. Elliot and Lalonde, Institutes of Dentistry ; Mr. O'Donnell, Dental Physiology.

## EVENING SESSION.

The President in the chair.

The case of A. H. Lacy, of Smithville, a licentiate of the Board, was taken up and discussed, whereon it was resolved,

“That whereas Mr. A. H. Lacy has obtained his license to practice Dentistry by misrepresentation, that his license be cancelled, and that the Secretary be instructed to lay information before a competent tribunal to prosecute for the same.”

Wednesday, July 21st. The President in the chair.

Dr. Scott was present in addition to the members present at yesterday's session.

S. B. Chandler, of Newcastle, and E. D. Greene, of Caledonia, were granted licenses, having furnished proof of five years' practice.

Mr. O'Donnell, a member of the Committee appointed to make enquiries respecting the advisability of opening a Dental College, requested to be allowed to resign in consequence of his duties being so great that he could not attend to it. Granted.

The Committee were allowed till to-morrow to report.

Thursday, July 22nd.—The President in the chair, and the other members, already reported, were present.

W. H. Waite, D. D. S., of Liverpool, England, was granted the degree of L. D. S., he having complied with the rules of the Board.

Mr. O'Donnell gave notice that he would move, at the next session, that the Board apply to the Legislature at its next session, to make an addition to the Act, allowing their Board to grant the degree of Fellow of the Royal College of Dental Surgeons of Ontario to persons qualified by merit, living outside this Province and being subjects of Her Majesty.

The College Committee presented their report, which was received on motion of Mr. O'Donnell, seconded by Mr. Callender.

The Board went into Committee of the Whole on the same, on motion of Mr. Relyea, seconded by Mr. Lalonde. Mr. Lalonde in the chair.

After a good deal of desultory discussion, in which Messrs. Elliot, Kahn, Callender, Relyea, Wood, Chittenden, O'Donnell and others

took part, the following report was received, having been amended on suggestion made by Mr. O'Donnell:

Your Committee, to whom was referred the College question, beg leave to report that they have duly considered the matter and after consultation with Dr. McCaul, President of the Toronto University, and Dr. Rolph, Dean of Victoria University, have concluded to recommend the immediate establishment of a College; and would advise that an Assistant Secretary be appointed, who shall reside in Toronto, and his duties be defined by the Board before adjourning; also, that circulars be issued to the profession announcing the same.

(Signed,)

B. W. Day,

Queen's Hotel, July 22, 1869.

Chairman of Committee.

The Committee rose, and, after the President took his chair, reported, which was adopted as amended. The meeting then adjourned.

Friday, July 23rd. Morning session.

Members all present except Dr. Scott, Messrs. Kahn and Bogart.

The following gentlemen having passed successful examination were granted certificates to practice dentistry, viz: Messrs. S. Smiley, J. R. Irish, S. H. Walsh, C. H. Bosanko, S. G. Webster, W. M. Foster, G. S. Thomas, J. W. Coyne, W. C. Jewell, and F. Frank.

The Finance Committee presented their report, showing a balance on hand of \$1,119.19. The Committee also recommended the payment of several accounts.

The Secretary reported the names of about fifty persons who were practicing in the Province without licenses, and recommended the licentiates in each locality to give information to the proper persons, in order that the offenders may be prosecuted. The suggestion was accepted; and it was hoped that each licentiate would perform his duty in every case.

Mr. O'Donnell moved, seconded by Mr. Wood, "That application be made to the Legislature of Ontario, at its next session, (in accordance with a motion given yesterday,) to add a clause to the Act respecting dentistry, empowering the Board to confer the degree of Fellow of the Royal College of Dental Surgeons of Ontario on dentists entitled to the same by merit, living out of the Province and being subjects of Her Majesty; also to amend clause 18 of the Act, so that the penalty shall be for the first offence \$50, second and subsequent offences \$100, or in default six months imprisonment; and that the President, Mr. Callender, and the mover and seconder be a

committee to make further amendments thought necessary, and report to this Board to-morrow morning."—Carried.

#### Saturday Forenoon.

The Committee appointed to report on the amendments thought necessary in the Act, reported as follows:—"That in clause 3 the word twelve be substituted by seven, so that seven members constitute the Board instead of twelve; that clause six be amended so as to read "every subsequent election shall be held on the Monday following the first Tuesday in the month of May in every second year." In clause 11 the word one be substituted for two, and to have the sitting to commence on the first Tuesday in May in each year; that clause 14 be amended as 11, putting May in the place of January and July, and make one sitting only in each year. They also recommend that the following clause be added:—"For services performed by any licentiate within this Province the same privileges conferred upon physicians and surgeons by the various Acts relating to the practice of medicine and surgery in this Province, be allowed them."

The report was received and adopted.

Mr. O'Donnell moved, seconded by Mr. Meacham, "That this Board appoint the following persons to prosecute parties practising dentistry without license in their respective localities:—Toronto, T. J. Patterson; Hamilton, C. A. Sadlier; Kingston, C. B. Price; Brockville, Joseph Deacon; Ottawa, W. H. Walker; Cobourg, Wm. Kerr; Perth, Mr. Hall; Pembroke, H. H. Loucks; Cornwall, J. Bergin; Picton, Allison & Gibson; Belleville, L. H. Henderson; Peterboro', John Burnham; Seaforth, J. M. Benson; Goderich, Ira Lewis; London, Mr. Greyden; Guelph, D. Guthrie; Galt, C. A. Durand; Newmarket, A. Boulton; Prescott, McNeil Clarke; Brantford, the County Attorney; Woodstock and Stratford, the County Attorneys."—Carried.

It was also moved that in towns where no persons were appointed, the licentiate forward the name of the person he wished to the Secretary, who would put him on the list.

The Committee appointed to take into consideration the advisability of opening a College, reported in substance as follows: "That they have given the subject every consideration, and have concluded that a College should be opened immediately, and that the following gentlemen be appointed Professors, and that they have power to select or recommend adjuncts, viz: F. G. Callender, operative dentistry; J. O'Donnell, mechanical dentistry; J. O'Donnell, institutes

of dentistry. That the chairs of anatomy, physiology, chemistry, and *materia medica* be given to gentlemen connected with some of the Universities of the city. Arrangements to be made hereafter, and that \$100 be the fee for the course ; matriculation fee \$5 extra.

[Signed.]

B. W. DAY.

“Chairman.”

The report was received, and the Board went into Committee of the Whole on the same.

Mr. Callender stated that he had not expected the position offered him, neither did he desire it, and it was only at the almost unanimous desire and urgent solicitation of the Board that he accepted it.

Mr. O'Donnell stated that with respect to mechanical dentistry he occupied the same position, and it was only accepted by him because, after the arguments used he could not help but accept the position.

Mr. R. G. Trotter was appointed an adjunct professor of operative dentistry.

Mr. W. Myers was appointed an adjunct professor of mechanical dentistry.

The Committee rose and reported, after which the report was adopted.

Mr. Meacham moved, seconded by Mr. Lalonde, “That the thanks of this Board are due, and are hereby tendered, to the managers of the Queen's Hotel for the uniform kindness extended to the members during this and former sessions, and that a copy of this resolution be forwarded by the Secretary to Mr. McGaw.”—Carried.

Necessary funds were voted the Professors to furnish the College ; also instructions were given them to open it some time during the month of October next.

After the transaction of other preliminary business the Board adjourned.

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#### ONTARIO DENTAL SOCIETY.

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The annual meeting of this Society was held in Belleville, on Tuesday and Wednesday, July 27th and 28th.

First session, 2 p. m., Wednesday. Thos. Rowe, M. D., President, in the chair.

The following members present :—C. S. Chittenden ; D. Pentland ; W. C. Adams ; H. H. Nelles, D. D. S. ; J. B. Willmott ; S. B. Chandler ; John Bowes ; Lyman Wells ; J. Yemen ; D. A. Bogart ; A. D. Lalonde ; H. W. Branscombe ; J. M. Brimacombe ; F. G.

Callender; L. Clements; T. J. Jones; H. McLaren; Robert Reid; H. T. Wood; G. V. N. Relyea; J. L. McDonald; C. H. Dorland; M. D. Ward; J. S. Bowerman; W. K. Graham; D. W. Dulmadge; D. F. Hayes; R. G. Trotter; M. E. Snider.

The following were elected members, and took part in the meeting, viz:—S. T. Clements, John Leggo, and G. L. Elliot.

The minutes of the previous meeting were read and confirmed.

On motion it was resolved to follow the order of business laid down in the printed programme.

The Committee appointed at the last meeting for that purpose presented a draft of Constitution, already published in the June number of the *Journal*.

The clauses were then taken up separately, and adopted with slight amendments, in the first, making the name, "Ontario Dental Society," and in the sixth, making the annual fee two dollars.

On motion of Mr. Chittenden, seconded by Mr. Wood, Drs. Berryman, Richardson, Caniff, Boulter, Dewar, Nichol, Potts, Beers, Whitney, and C. H. Hubbard Esq., were elected honorary members of the Society.

Second session, 7.30 p. m. President in the chair.

Thos. Rowe, M. D., retiring President read a very neat and practical address.

Balloting for the officers for the present year was then proceeded with, resulting in the election of C. S. Chittenden, of Hamilton, President; H. T. Wood, of Picton, Vice President; James B. Willmott, of Milton, Secretary; John Bowes, of Hamilton, Treasurer.

The newly elected officers having taken their seats, on motion of D. A. Bogart, seconded by F. G. Callender, the cordial thanks of the Society were tendered to the retiring officers for their very faithful discharge of their duties during their term of office.

Mr. J. Yemen, of Mitchell, read a paper on "The practicability of extracting and re-inserting the same tooth." A lengthy discussion followed when the Society adjourned till Wednesday morning.

At 8.30 a. m., Mr. Chittenden filled a tooth before the Society, illustrating the use of Dr. Daboll's duct compressor, and of the mallet in filling.

Third session, 10.30 a. m. The President in the chair.

H. W. Branscombe, Picton, read a paper on "Dental Brotherhood," which gave rise to considerable discussion, in which Messrs. Relyea, Wood, Chittenden, Leggo, Nelles, and Callender took part.

A vote of thanks of the Society was tendered to Mr. Branscombe for his paper, and a copy requested for publication in the Journal.

Mr. W. K. Graham, of Brampton, read a paper on "Dental Progress," for which the thanks of the Society were tendered.

The President named as a Committee on Finance, Messrs. W. C. Adams, D. A. Bogart, and W. K. Graham.

As a Committee on Topics for discussion at the next meeting, Messrs. Nelles, Callender, Wood, and Leggo.

As a Committee to make arrangements for next meeting, Messrs. W. C. Adams, J. W. Elliot, R. G. Trotter, M. E. Snider, and F. G. Callender

Thos. Rowe, M. D., read a paper on "The pathology of Inflammation," for which the thanks of the Society were tendered, and a copy requested for publication.

Fourth session, 2.00 p. m. The President in the chair.

Dr. Nicholl, of Belleville read a paper on "Syphilitic affections within the scope of Dental Surgery."

On motion of Mr. Callender, seconded by Mr. Bowes, the thanks of the Society were tendered to Dr. Nicholl for his valuable paper, and a request that he allow it to be published.

On motion, Messrs. Wood and Chittenden stated to the Society the arrangements which had been made by the Royal College of Dental Surgeons, for the establishment of a Dental College at Toronto.

A. L. Bogart, Esq., Master of the Steamer "Prince Edward," having kindly tendered the members of the Society a sail on the Bay, the Society at 3 o'clock adjourned for that purpose.

Fifth session, 7 p. m. The President in the chair.

Moved by Mr. Leggo, seconded by Mr. Bowes, *Resolved* that the cordial thanks of this Society are due, and are hereby given to A. L. Bogart, Esq., for his kindness in giving the members of the Society an excursion on the Steamer "Prince Edward."

J. Bowes, of Hamilton, read a paper on "Our duty towards the public," followed by a lecture by Dr. Potts, of Belleville, on "Dentistry, its relation to Surgery." The thanks of the Society were returned to both gentlemen, and Dr. Potts was requested to allow his name to be published.

The Committee on "Topics" presented the following report, which was adopted, viz:

Your Committee appointed to select topics for discussion at the next meeting, beg to report that they have selected the following

gentlemen to read essays, viz:—H. H. Nelles, D. D. S., London, on Dental Hygiene; C. P. Lennox, Chatham; John Leggo, Ottawa; J. B. Willmott, Milton; the three latter to notify the Secretary of the subject chosen, before the circulars are issued for the next meeting.

The Committee on Finance presented their report, which was adopted.

The Treasurer presented his report, which was also adopted.

A proposition was made to fix a minimum scale of fees, but after discussion, was withdrawn as premature.

At the suggestion of the President the "Code of Ethics" of the "American Dental Association," as published in the May number of the Journal, was unanimously adopted.

On motion of W. C. Adams, seconded by W. K. Graham, *Resolved*, that the next meeting of this Society be held in Toronto, on the day fixed or to be fixed by law, for electing the Examining Board of the "Royal College of Dental Surgeons of Ontario."

Most of the members purposing to leave by the early trains, it was resolved to conclude the business at the present session. In order to do this the reading of a paper on Cleft Palate, by D. A. Bogart, of Hamilton, was postponed till the next meeting.

After the transaction of some routine business, the Society adjourned.

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## NEW YORK STATE DENTAL SOCIETY.

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BY W. C. BARRETT, WARSAW, N. Y.

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The New York State Dental Society met in the Assembly Chamber of the State House at Albany, on the 27th July. Delegates from each of the eight District Societies of the State were present, together with a number of the permanent members of the State Society. It is probably known to most of the readers of the JOURNAL that New York State has a law regulating Dental practice. Not as stringent in its provisions as the Canadian Act, yet a very good law; one which creates a distinction between the worthy and well qualified operator, and the Dental quack; which regularly incorporates our Dental Societies, and gives the profession a status in the eye of the law equally as good and high as the Medical profession. What more could we ask of the Legislature? This law established a Dental Society in each of the eight judicial districts of the State. The State Society is composed of delegates from each District Society, and permanent members

of its own. The Society was called to order by President A. Wescott, of Syracuse ; L. W. Rogers, of Utica, Secretary.

The first day was occupied by reports of committees and of District Societies, election of permanent members, proposed changes in the by-laws, together with other business matters. On the second day Dr. J. G. Ambler, of New York, read a paper on the history of the early experiments in making mineral teeth. The Doctor exhibited a case of teeth made by himself, some of which were said to be the first mineral gum teeth ever made in this country. He reviewed the manufacture of mineral teeth, tracing its history from the first crude experiments down to the present day. Other papers were read by different members, of which I have not time to speak.

A committee was appointed to endeavor to obtain of the Legislature a proposed amendment to the law regulating Dentistry, establishing the Degree of "Master of Dental Surgery," to be conferred by the Board of State Censors, on those who were, after due examination, the recipients of its Diploma ; and also to urge upon the State Societies of other States the propriety of obtaining like legislation. This will, if discriminatingly conferred, be an honor that should be much sought after, as it will be an evidence of its recipient's being not only theoretically but practically qualified as a Dentist ; for the candidate must be a practicing dentist of repute, and must be examined not only in the theory of his profession, but must give proof of a successful practice. Our law already provides that the State Board of Censors may confer Diplomas. It is proposed to add to it the Degree M. D. S.

Ten Dentists who were examined, passed the Board and received their Diplomas, among whom, from Western New York, were Drs. A. P. Southwick, of Buffalo, J. C. Gifford, of Westfield, and W. C. Barrett, of Warsaw. Dr. B. T. Whitney, of Buffalo, was elected president for the ensuing year.

Chancellor Pruyn appeared before and addressed the Society, congratulating it upon its prospects of enlarged usefulness and honor. The Governor of the State was not able to make his promised visit, on account of absence from the city.

After a pleasant and profitable session the Society adjourned, to meet at the same place next year.

PROCEEDINGS OF THE ODONTOGRAPHIC SOCIETY OF  
PENNSYLVANIA.

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BY THOS. C. STELLWAGEN, M. D., D. D. S., PHILADELPHIA.

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The regular monthly meeting was held on Wednesday, June 2d, 1869.

The President in the chair.

The essay of the evening was read by the author, Wm. H. Howard, D. D. S. Subject—"Maxillary Absorption."

Dr. Eisenbrey alluded to the difference of opinion as to whether the absorption of the roots of the deciduous teeth was due to pressure, the action of an acid secretion, or want of material; he inclined to the latter,—that is, disintegration is in excess of integration, hence a gradual disappearance of the roots from want of sufficient assimilation, as sometimes the roots of the temporary teeth are found to be absorbed before the permanent are in close proximity to them. In fact the word temporary explains all. Nature has a demand for them, and while that demand lasts, supports them; and when they are no longer needed, she withdraws that support; they break down, and those teeth that remain in longer than the usual time is proof conclusive that they had not fulfilled their mission yet, and nature held fast to them.

Dr. Truman was disposed to think absorption was the result of pressure, as he had seen the middle of the root sometimes affected when the apex was left in a normal condition; this he considered owing to the presentation of the second tooth to that part of the first.

Again, it is the experience of most dentists that sometimes the milk teeth are retained and do good service until quite late in life, when from some cause the development of the adult teeth has been arrested.

He alluded to an absorption of the second teeth, which he had occasionally met with, around their necks, due as he concluded, to diseased action.

Dr. Breen coincided with Dr. Truman, especially where he referred to the eruption of the permanent teeth at a late period in the life of the patient, and spoke of several cases, one of which was a child of 10 years of age, with only its permanent central incisors and first molars erupted, the rest of the deciduous teeth being intact.

Dr. Nones took up the consideration of the general alterations met

with after extraction of the permanent teeth, giving hints concerning the preparation of the mouth for artificial teeth mounted on plates.

Dr. Stellwagen, when thinking over the subject-matter of this paper, could not refrain from quoting the words of Gabriel Andral, eminent as a physician, famous as professor of hygiene, and afterwards of pathology and general therapeutics in the Medical School of Paris, who says: "The economy does not appear to be more than a *great whole*, indivisible, in the state of health as in the state of disease."

If this be true—and who will dispute it?—we must look for the cause of this process, not here alone, but throughout the whole system, and the numerous well-known cases of the absorption of superfluous material, or organs rendered useless by the changes of the economy that take place in obedience to physiological as well as pathological laws, will all open to us means for the study of similar actions under various circumstances.

Indeed, many acts of nature, seemingly far more wonderful than this of the exuviation of the deciduous teeth, may be quoted: among which are the great changes which occur to the umbilical vessels at birth, transforming almost immediately the grand channel of foetal life into a mere appendix, much of which is not only useless, but actually offensive, and is consequently wisely removed by the accoucheur.

Pressure may have something to do with the removal of the roots of the milk teeth; but no doubt the same cause that stimulates the development and growth of the adult teeth enables them, as they increase in size and importance, to appropriate to themselves all spare tissue which can be dispensed with in other parts of the economy. What this cause is he felt that we were perfectly ignorant of. As an example of how pressure may cause absorption or interfere with nutrition, he mentioned, as familiar instances, the appearance of a finger upon which a ring has been worn for some time, the mouth after wearing artificial plates, irregularities of the teeth, their causes and corrections.

Dr. Pike gave as his opinion, that pressure might hasten, but was not absolutely necessary to accomplish this action. The absorbed material, he believed, must pass through the general circulation to be purified and invested with all that is required for the forming tooth.

Dr. McQuillen—directing attention to the beautiful and instruct-

ive series of twenty French preparations in the museum of the College, demonstrating the changes occurring in the jaws and teeth from the period of foetal existence until extreme old age—said, that in examining these carefully, one cannot but be impressed with the valuable lesson which they teach of the economy of nature in providing ample room for the development of the deciduous and permanent sets of teeth in the contracted space afforded them in the jaws. When observing the peculiar positions which the crowns of permanent teeth occupy in the jaws, and relations they bear to the roots of the deciduous set, it is a matter of surprise, not that the permanent teeth are occasionally irregular, but that they should ever assume the symmetrical relation which constitutes their normal condition when erupted. This result is due, in the language of Herbert Spencer, to the fact “that development is a change from the incoherent, indefinite homogeneity, to coherent, definite heterogeneity.” The mutations taking place in the jaws and teeth are but typical of the changes occurring in every part of the organism dependent upon waste and repair; and although the two operations vary in their relative rates at different periods of existence, repair is everywhere and always making up for waste. Any explanation of the absorption of the jaws and teeth that ignores the operation of this law is not only unphilosophical, but utterly without foundation.

Dr. Pike had been led to think that there might be some acid secretion around the root of the tooth undergoing absorption, as he had found blue litmus paper respond to it if used quickly, before the blood started, after an extraction.

D. Eisenbrey advised that this experiment be made by applying the paper to the root of the tooth.

Dr. Stellwagen proposed the use of the ether spray producer, which he thought would sufficiently retard the flow to enable one to test both the socket as well as the root of the tooth.

Dr. Howard asked if this acid reaction might not be due to an accidental decomposition of foreign substance, as food, etc., around the necks of the teeth.

Dr. Trueman then exhibited an instrument of an old pattern for condensing a filling by the pressure gained from the patient in biting upon it; he thought it sufficiently useful to warrant its reintroduction to the profession. He also had with him several styles of drills which he recommended; among these were the twist and rose head,

the latter having a prominent edge extending across the top, which greatly facilitated its cutting.—*Dental Cosmos*.

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## SELECTED ARTICLES.

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### ALVEOLAR ABSCESS.

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BY DR. W. H. SHADOAN.

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[Continued from page 307.]

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#### SURGICAL TREATMENT.

The surgical treatment of alveolar abscess is very short and simple. That most commonly resorted to, viz: extraction, is generally successful. There are cases, however, in which it is desirable to avoid the extraction of the tooth, but, there are a great many teeth thus affected that are utterly useless and should be removed; for the irritation which they cause to the surrounding parts, to say nothing of the abscess, is sufficient cause for their removal. Old roots of teeth, and teeth that have lost their antagonists are nearly always a source of irritation, and when that is the case they should be removed. It sometimes happens that an abscess at the root of a tooth, will burrow into the alveolar process, making the cavity containing the abscess larger a short distance beyond the root than at the socket. In such a case the sac will nearly always be retained in the alveolus after the tooth or root is removed; the abscess now acts independent of the cause which produced it, and the extraction of the tooth will rarely effect a cure, and an operation for the removal of the abscess will be necessary.

When the tooth is a valuable one and should be retained, either for ornament or service, and therapeutic treatment does not accomplish the desired result, it may be aided by the trephine, drill or chisel; with either of these instruments an opening may be made through the alveolus opposite the point of the root of the affected tooth, then, with a suitable instrument, cut away or separate the sac from the root.

In some cases of alveolar abscess, the alveolus is largely affected, and in such a diseased condition that it will not heal without first cleansing the parts; this may be done by chiseling or scraping off

all dead particles of bone in and about the cavity, for as long as anything of the kind remains, the chances of success are greatly diminished. Care should be taken in all cases, that unnecessary pain is not inflicted. I have met and treated cases of abscess, where the outer wall of the alveolus was so largely affected as to present a honey-comb appearance; the only speedy and successful treatment in such a case, would be a breaking down of the diseased wall, and the removal of every particle of the diseased bone. Again, in addition to the above, the root of the tooth may be in such a diseased condition, that the removal of the diseased portion of its substance will be necessary to a cure. All diseased bone and tooth substance being removed, a proper therapeutic treatment, and a vigorous constitution, will soon affect a cure. Compresses are necessary to stay the tide of nutritious food to the abscess, together with all other means that assist in the abatement of the disease.

To sum up the whole treatment, in a few words, the forceps and the chisel are the most effective instruments, and will generally be found successful. In the incipient stage of an abscess, if it be at a point where the outer wall of the alveolus is thin, and easily cut through, the knife may be used to advantage, by cutting through the process to the abscess, which will greatly facilitate the escape of the pus, and in this way a cure is sometimes effected. Scarrifying the gums, and thoroughly opening down to the sac with the knife is often successful. These are the surgical means usually employed, and are so plain that the time, and manner need not be misunderstood.

#### EVIL RESULTS.

We wish now to call attention to some of the evil results of alveolar abscess. I desire to call attention first to children's teeth. In these the greatest evil and most to be dreaded is necrosis which may take place, and extend to the sockets of the permanent teeth, causing exfoliation of their walls, as well as those of the temporary teeth. This is of the utmost importance, as by the destruction of the alveolus the permanent teeth are also very often lost. There have been several cases where the disease occasioned by an abscess caused exfoliation of the sockets of two or three teeth. It is frequently the case where the first or second superior molars are effected, their roots being situated immediately beneath the floor of the antrum, and as the roots very closely approximate, and sometimes even penetrate it, an abscess of these teeth often produce a disease in this cavity, that is very troublesome, and may result in Hydatides of the antrum. They

are often very hard to cure, and in some cases are never cured. This is a very serious form of disease, superinduced by abscess. We find about as extensive, and alarming troubles arising from an abscess of the inferior third molars, as in any other of the mouth. Some of the reasons for this are, first, the difficulty of diagnosing the disease. We find physicians, as a general rule, liable to be misled, and even Dentists are not always free from being deceived, in consequence of the opening for the escape of the pus, being at a considerable distance from the seat of the disease, the patient is often treated for a different disease entirely. Such has been, is now, and will continue to be the case, for those who are called in such cases treat their patients for months, and even years, without knowing what is the real cause of the disease, while, in the meantime, the abscess is still progressing, and as the tooth is situated so closely to the fauces, and soft parts, they will soon become largely inflamed, and if the tooth is very much decayed, the evil is increased by the amount of irritation produced by the ragged edges of the tooth, and thus extending to the lungs, may, so seriously effect the lungs as to finally produce *Phthisis Pulmonalis*. Again, the amount of swelling and inflammation in the mastoid muscles may be such as to render them useless, for the time being, and if the disease continues for considerable length of time the muscles become rigid, and finally the jaws can not be used with that freedom they should be.

Exfoliation of the alveolus is another of the evils of alveolar abscess. This was mentioned above, but only in connection with children's teeth. I now recur to it mainly for the purpose of giving it a more extended notice, and relate a case or two to show how far this disease will be carried when all things are favorable. When the inflammation is extreme or very great it may produce necrosis, and exfoliation. In an old work published by "Fox & Harris on the Human Teeth," two or three cases are recorded, in two of which, three teeth, and in the third, all of the anterior teeth were lost by the suppurative process, produced by an abscess.

It is unnecessary to mention other cases to prove the evils of the disease in question, any one will admit that those already mentioned are quite sufficient to show the importance of timely attention. With regard to the treatment of abscess there is yet very much to be learned; in fact very little as compared to what is required is yet thoroughly understood. Yet, enough is known to prove conclusively that very many cases may and can be cured. But the progressive practitioner will not rest contented with what is known on the subject.—*Dental Register*.

## MAXILLARY ABSORPTION.

BY WM. H. HOWARD, D. D. S., PHILADELPHIA.

(See page 19.)

Upon the introduction of this subject to the mind, the question arises, What special absorption is there passing in this portion of the economy that requires consideration? I think to dentists (or to any one interested in nature's works) there are local actions progressing, both physiological and pathological, interesting and valuable to ferret out, and well worth a discussion. I shall start with the deposit of earthy matter in the areolar tissue during foetal life, where we may suppose there exists no special absorption (although there must be the same breaking down and repair that we have in after-life). The calcareous deposits take place in their position in the maxillæ, and the deciduous teeth within, without altering the contour of the soft parts; this process goes on until considerable rigidity is acquired, and, at the same time, the various stages in the formation of the teeth are passed through. When we reach the saccular stage, we have a necessary absorption started in the body of the maxillæ, produced by the elongation of the sac to accomodate a proportionate lengthening of the root of the tooth, which being surrounded on all sides by semi-solid matter, something must give way to the pressure laterally and downwards; the tooth will not, so the bone must, and it does, admitting, at the same time, that the tooth is rising. Yet there are apparent results here which prove to us that there are numerous changes produced by the growth of the dental organs—namely, elongation of the maxillæ, and widening and pointing of the ridges, in the body of the bone, heightened by the addition of material to the processes of absorption. I wish to withhold my theory of the disposition of the material of the *disturbed* cells until another point is reached, at which I can have a more tangible and familiar example to show in proof thereof. We have also at this stage changes throughout the maxillæ at the symphysis, condyloid processes, etc., all tending to symmetry of shape.

At the saccular stage, again, of tooth-formation there is considerable moving and change of position of these sacs, sometimes to accommodate themselves or each other, and at other times again coming into their proper places. In doing this, they are compelled to pass through a semi-solid medium, which must be gotten rid of by

absorption, and the space in the rear filled with a material analogous to that disturbed.

The cells do not separate or condense into smaller space for this accommodation, but are actually taken away by the absorbents—a purely physiological action, I apprehend; but where the pressure is too great, compelling rapid absorption, inflammation supervenes, and here, of course, we have disease.

Now, leaving the saccular stage, either in ease or disease, we come to the eruptive—in which there is an extensive absorption of obstructive material. We soon find the deciduous teeth in position, the permanent set in process of formation, some quite advanced; the child, at the end of two years, having his twenty middle teeth. He lives on, eats sours and sweets, and has pits and caves burrowed into these young organs, not by absorption, truly speaking; although it is an absorption—the same as when we speak of a sponge absorbing water.

Four or five years more pass, and then some more of these perishable members of the human frame show themselves. What a change has taken place before they appear? Something we could not see in the roots; which we have not thought of until the teeth were found loose and annoying the patient. On extracting them we generally find very little of the root left—sometimes none. This latter condition is usually the case with the molars. We fully understand the object of this absorption of the root, and see nothing but wisdom displayed in the result; whereas, non-absorption frequently proves a disaster, showing that there is need for this process.

It now becomes our duty, as investigators, to know what is done with all the material taken from these roots; not why, for this we know, and perhaps the whereabouts of the substance. There is a difference of opinion on this point, and which is the correct theory now comes up for discussion. There were in these roots cementum and dentine which have been removed. My belief is, that they are carried into the venous circulation, back to the arterial circulation, and come again into use in their primitive form, for solidification in the economy. To say that they are taken up by the formative membranes of the tooth seems a presumption which I do not feel willing to support. To suppose that this local use or readaptation of these materials was the case, what would be the result? Perhaps the same as we now find—a beautiful contour formed; but I should fear quite the reverse—indiscriminate growth upon one side, or perfect fusion between the first and second teeth, if not also a fusion with the alve-

olar walls. The cells are not capable of transformation and use from this state directly ; they need resolution. I cannot consider it possible they should obtain this, at or through the formative membrane, any more than old plaster of Paris can be used without recalcination, even admitting the vitality in these cells, which we have not in plaster ; of course the comparison is not a nice one, but it may serve to convey the idea.

We have next an absorption in the alveolar walls to permit the large crown teeth to come into place. Here the same process goes on ; the bone-substance is not used again directly to supply the wants in the progressive increase of the maxillæ ; but is carried into the circulation, and is doubtless used in its circuit to nourish other bones. There are many interesting changes in the maxillæ bearing upon my subject, as those in the lower jaw at the angle, at different periods of life ; those following the extraction of teeth ; from disease, as alveolar abscess, mumps, etc.

The upper jaw is also affected by the absorptive process—sometimes very considerably deformed from diseases of the maxillary sinus or antrum Highmorianum ; in these latter instances accompanying absorption goes on in the soft parts. The same rule in regard to these tissues can be relied upon as that set down for the hard parts.

The causes of absorption seem to be pressure, ichorous fluids or solids, foreign materials, and sometimes it is spontaneous.

The former is most prolific, as in the case of abscess in the maxillary processes after extraction, or from salivary calculus, etc.

The second, viz., ichorous fluids or solids, is from ulcers, fistulous abscesses, etc.

The third, viz., foreign materials, is from decomposed materials, forming mephitic gases, pieces of metal, and necrossed bone, etc.

Fourth, viz., spontaneous—in senility, or in rickety subjects. There are a few exceptions in cases not losing the teeth, where the supply in the system equals the absorptive process up to the point of senility.

—*Dental Cosmos.*

## EDITORIAL.

### THE DENTAL COLLEGE.

The proposition of opening a Dental School under the Act of Parliament was discussed at some length in our columns—the “pro’s and cons having each had their say,” during the last year. The matter

was talked over by quite a number of cliques, and quite a number of plans for the organization of the "Faculty" were drawn up, but as the Board was the only body legally qualified to originate an Institution of the kind, all the schemes and plans, or nearly all, were withdrawn and the originators like good citizens, or at least like good dentists, contented themselves with giving the different members of the Board their advice and opinion as to what should be done.

Well, the Board met on the 20th of last month, and at as early an hour of the session as possible, proceeded to consider the College question in all its bearings. From the very first it was found to be an exceedingly difficult matter to deal with without giving serious offence to some, or rather to a good many who had proffered their counsel and advice. Of course each member went to the meeting with his mind, at least partially, fixed on some plan of organization, which he hoped to see carried out, but when it was found, on discussing the question, that there was such great divergence of opinion, the members almost unanimously abandoned their favorite schemes and decided to look the matter square in the face and fix upon whatever plan of organization seemed *best* under the peculiar circumstances under which the profession stands at the present time. The first thing to be done seemed to be, to get one or both of the Medical Schools in Toronto, to allow the Dental Students to attend lectures in Anatomy, Physiology, and Chemistry, without passing the matriculation examination required of Medical Students. A committee was appointed to wait upon the officers of the Toronto School of Medicine, and the Victoria University, and see what arrangements could be made. That committee reported that the officers of the two Medical Schools were *willing to grant all the privileges which had been asked for*, and more than that, that they had manifested a great deal of interest in our undertaking. The next thing to be arranged was the securing of a first-rate man for the chair of Operative Dentistry. Mr. F. G. Callender, of Cobourg, was the gentleman whom all thought should receive the appointment, but he seemed unwilling to undertake the duties, but finally consented after the most urgent solicitation. The chair of Mechanical Dentistry was filled by the appointment of Mr. J. O'Donnell, the Secretary of the Board, and it was decided not to appoint any one to fill the other chairs, but when, however, the two Professors met and consulted with the gentlemen of the Medical Schools, it was thought best to add the names of Dr. Day and Mr. Chittenden, to the Faculty, which was accordingly done, and the announcement

published in the Toronto papers. It will also be found in our advertising columns.

We congratulate "our brotherhood" on the establishment of this, the last thing needed for the advancement and elevation of our loved profession. Some of us may not feel quite satisfied with the basis on which it has been erected, but we feel sure if we all, as one man, rally around the College as it now stands, that success will attend the efforts of those appointed to attend to the duties of teaching. If mistakes have been or shall be made, they can be corrected before another year rolls around.

We would most earnestly urge those about to enter the profession not to neglect the opportunity now afforded them, as more of the real knowledge of Dentistry can be gained in one session at this College, than in years of private tuition.

C. S. C.

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#### PERSONAL.

We enjoyed a pleasant trip to Philadelphia, and New York, last month, and spent a very profitable time in both cities, among our American cousins. A visit to S. S. White's magnificent establishment in the former city, was worth the visit ten times over; and the personal pleasure we enjoyed from the acquaintance of a gentleman so deservedly respected for his private worth and business enterprise, as the proprietor, will ever be remembered. We must confess to great surprise at his splendid and varied display of dental stock. A visit to Justi & Co., the Philadelphia Dental Manufacturing Company, and others was very profitable; and last but not least, to Dr. J. H. McQuillen, editor of the *Cosmos*, to whom we are indebted for much kindness.

In New York we visited all the Depots, and a number of the household names in operative and mechanical dentistry. The pleasure of meeting such men as W. H. Atkinson, C. P. Fitch, W. H. Dwinelle, etc., can only be appreciated by one who loves his profession, and can reverence men who have done so much for its social and practical elevation.

Dr. Atkinson kindly permitted us to witness his operations in his own office, and nothing that we can at present say, will express the benefit we received. We have to thank Dr. A., for a present of some instruments, which, we assure him, will be treasured and well used.

We think we are justified in promising our subscribers to Volume Second of this Journal, some good contributions from the friends we met.

W. G. B.

REMOVAL TO TORONTO.—In consequence of his appointment to the Professorship of Operative Dentistry, in the Dental College about to be opened, our old friend Mr. Callender is about to remove to Toronto, and asks us to offer his practice for sale. We most heartily congratulate the citizens of Toronto, in that they are to have a man of his professional standing take up his residence there, and our Dental Brethren because they will have the pleasure of having him for a member of the City Dental Society which we hear they intend to inaugurate this winter. To a first-rate operative dentist (it would be useless to any other), Cobourg is a most desirable opening. For particulars concerning the place, see advertisement.

PAROTID DUCT COMPRESSOR.—We have been using for some months, a neat little instrument for shutting off the saliva from the Parotid gland, the invention of Dr. G. C. Daboll, of Buffalo, which, with Dr. Southwick's duct buttons, puts an effectual stop to the flow of moisture from that direction. We have found it perfectly invaluable. Mr. Hubbard tells us that he has a supply of them for sale.

### MISCELLANEOUS.

#### METHOD FOR DETERMINING THE SIZE OF THE ROOTS OF TEETH PREVIOUS TO EXTRACTION.

BY MR. O. SALOMON.

Before the educated dentist attempts the extraction of a tooth, he examines the form of the crown, which enables him to determine with certainty the direction of the roots. For young practitioners and students some indications will be of importance, therefore I give here, those communicated by Dr. B. Whener:

I.—If the crown is large and short we may expect that the roots are long, while with a long and narrow crown, the roots are small and slender.

II.—If the neck of a posterior tooth, is much thinner than its crown, the roots will diverge.

III.—If the neck of a posterior tooth is as large as its crown, we

may conclude that the roots run down parallel with the sides of the crown.

IV.—In case the neck of a posterior tooth, should be larger than the grinding surfaces, the roots will be found converging.

V.—When we observe one of the sides of the crown inclining to the middle of the tooth, so we will find the corresponding root bent in the same direction, while the other roots are found parallel with the perpendicular line of the tooth.

In the wisdom teeth the abnormal direction of roots is the most common.—*American Journal Dental Science.*

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DISEASE OF THE LIVER.—From a notice in the *Dublin Medical Press and Circular* of Dr. Murchinson's new book of Diseases of the Liver, &c., we extract the following:—

"Take, for instance, the question of the action of mercury on which Dr. Hughes Bennett has been engaged in experiments for the British Medical Association, and whose conclusions thereanent so surprised the great body of practitioners. Dr. Murchinson has evidently carefully weighed the evidence, and he has come to the conclusion which is likely at present to receive the assent of the majority. He thinks "mercury and allied purgatives probably produce bilious stools by irritating the upper part of the bowel, and sweeping on the bile before there is time for its absorption." He recognized the fact that articles of food frequently give rise to similar effects, and thinks that their action is precisely similar. From this we might suppose that other purgatives should be substituted more frequently than they are, and assuredly this view supports the American preference for podophyllin, or as it is called sometimes in the States, "vegetable calomel." We could certainly say much in its favor. Dr. Murchinson considers calomel of great use for congestion of the liver, but if it increased the secretion of the bile, it would have an injurious effect. He thinks it is likely "irritation of the duodenum by purgatives, may be reflected, to the gall-bladder, and cause it to contract, and that the evacuation of the viscus may account in part for this increased quantity of bile in the stools." Dr. Murchinson's is a handy sized volume. The former half treats of enlargements of the liver, under the division of painful and painless enlargements. The latter includes gall-stones, jaundice, hepatic pain, contractions, and abdominal dropsy. The cases upon which the lectures are founded are well selected and carefully related. Their study is likely to lead to more careful diagnosis and treatment."—*Boston Med. and Surg. Journal.*

## NOTES FROM L'UNION MEDICALE

*Salivary Calculi.*—M. Paulet, at the Imperial Society of Surgery, exhibited two salivary calculi which he found in Wharton's duct, in a patient affected with a purulent discharge issuing from the floor of the mouth. The calculi were in the duct of the left side, and M. Paulet extracted them by excision. He ascertained that the sub-maxillary glands of both sides were stuffed with calculi. These stones are not rare in Wharton's duct; as M. Paulet has collected 65 cases of them, while the foregoing is the only instance in which he is cognizant of their presence in the sub-maxillary glands themselves. M. Panar, however, presented a salivary calculus, which he had extracted by excision from the sub-maxillary gland. In this case pus was seen issuing from the open orifice of Wharton's duct. M. Desormeaux remarked that he had once extracted a stone from *Stenon's duct*.—*Boston Med. and Surg. Journal*.

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EARLY DENTITION.—M. Guenoit related to the Societe de Chirurgie the case of an infant which, when nine days old, exhibited a spontaneous expulsion of the two middle upper incisor teeth, together with the destruction and expulsion of the dental bulb. There was some gingival stomatitis, but no abscess of any kind. The teeth resembled two solid shells, covered with a thin layer of enamel. These cases are rare. In connection with this subject M. Guenoit enumerated several celebrated persons who are said to have been born with teeth, such as Mirabeau, Mazarin, Louis XIV., to which he would have added that of M. Broca had not this gentleman disclaimed any right to such a distinction. Believing the fact generally admitted, that infants are occasionally born with teeth ready cut, we are greatly surprised to find such an experienced accoucheur as M. Blot utterly denying its accuracy. He says he has never met with an instance of its occurrence in 30,000 infants that have come under his observation, and the experience of his colleagues is just as negative. However, that unfailing repertory of information, M. Giraldes, was enabled to refer to numbers of cases of children born with one or more teeth; and he has met with similar cases in his own practice. M. Besneir observes that such cases are familiar enough to matrons, who are in the habit of at once extracting the teeth. We suspect that this operation must have been already performed in cases that otherwise would have attracted M. Blot's attention.—*Med. Times and Gazette*.

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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MERBURIUS VIVUS.

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BY C. S. CHITTENDEN.

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Some year and a-half or two years ago, Dr. H. S. Chase, now of the *Missouri Dental Journal*, called the attention of the profession, through one or more of the dental journals, to the efficacy of the Homœopathic preparation of mercury, called mercurius vivus, in the treatment of periostitis. It was a new thing to me, and as I, in common with most of the dentists of the Province, was, and am frequently troubled with patients returning and complaining of more or less tenderness about the roots of teeth, after having had the nerves extirpated, and the roots filled, thus indicating that inflammation of the periosteum had supervened, I resolved to test Dr. Chase's prescription. Accordingly I called at one of the Homœopathic Pharmacies and asked for the drug. On being told for what purpose I wished to use it, the person in charge replied, "We have employed it for tenderness of the teeth for years, with marked success." I procured two ounces of the third decimal trituration, enough to last long enough to test the thing thoroughly, and waited for the first patient. For the purpose of giving the result of my treatment of this vexatious disease, and of inducing others to try this remedy, I give a short history of a few cases in which I employed the drug.

August 7th, 1868.—Filled the roots and crown of the first left superior molar, for Mrs. E. M——, aged about 25 ; strong and

healthy. Aug. 10th, Mrs. M——, called to say that she had been suffering for some hours with a dull heavy pain in the tooth which I had filled, but the pain had increased so much that she could bear it no longer. I gave her four doses of the mer. vivus, each dose containing about as much as would lie on a five cent piece, and requested her to take them at intervals of three hours. Aug. 12th, Mrs. M——, called, pain all gone, and tenderness nearly so.

*Case 2.*—Mr. T. C——, called to consult me with regard to the right central and lateral incisors of the lower jaw. On examination I found that the teeth were not decayed at all, but were slightly discolored, and very tender to the touch, and had been so for two or three days. I decided at once that the nerve had been injured or destroyed by a blow on the teeth, or a fall, by which they had been loosened, sometime in the man's early life, but he could not recall any accident of the kind. He stated that a few days before, in biting a hard biscuit, he had felt a slight twinge of pain in those teeth, and that the soreness commenced from that date. I resolved to try the mer. vivus in this case, too, as the nerve cavity in these teeth is so small that there would be less fear of trouble from its acting as a reservoir for holding fetid matter arising from the decay of the dead nerve, than is usually found in teeth whose nerves are large. Accordingly, I gave him four powders, and directed him to take them at intervals of four hours. Two days after he reported himself, free from pain and the soreness nearly all gone.

*Case 3.*—Miss M——, of Belleville, called about a severe tenderness of a left superior bicuspid, which had been filled a few days before, by Dr. Relyea. The nerve had not been uncovered while being prepared, but the dentine had been exceedingly sensitive. For a week after the filling, the tooth had given no annoyance, but, then Miss M——, began to feel a slightly painful sensation on closing her teeth together, which increased in severity till she called on me. I prescribed mer. vivus as in Cases No's. 1 and 2, but she objected that her family were Allopathic, and she didn't believe in "sugar pills." However, after my assuring her that the medicine could not injure her she consented to take it, and promised to come back and let me know its effect. Three days after she called and told me that she had been entirely relieved in a few hours after taking the drug.

I might relate a score or two of similar cases, but these will suffice to show that this drug may be used with decided benefit under certain circumstances, and I refer to these for the purpose of inducing others

to try it. It is to be hoped, however, that no dentist will exercise less *care* in treating teeth whose nerves have been devitalized, than he otherwise would because a remedy has been found which acts most beneficently when disease supervenes, after the *greatest care* has been taken with such teeth.

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## ARREST OF HEMORRHAGE OF THE NOSE

BY J. NEELANDS, L. D. S., LINDSAY, ONT.

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In the month of July last, a young man called at my office to have the operation of extracting some teeth performed, and requested to have nitrous oxide gas, administered in order to avoid suffering. I administered the gas which he inhaled freely, and when under its influences extracted the teeth successfully. Almost simultaneously with the extraction of the teeth I observed the blood flowing freely from his nose, at first I felt a little alarmed, but he informed me that he was subject to bleeding of the nose, and said that sometimes it would bleed nearly all night. A thought at once struck me of preventing the flow of blood through the left facial artery to the nose, as the blood issued from the left nostril. This I succeeded in doing without difficulty by placing the thumb upon the artery and tightly compressing it where it passes over the side of the inferior maxillary bone, some distance behind the corner of the mouth. Although his nose was bleeding in a stream, not a single drop was lost after I put my thumb there. I showed the young man where to place his thumb or finger upon the artery should the bleeding occur again, and he has had no difficulty in preventing his nose bleeding since that time. By pressing upon the artery where it passes over the inferior maxillary bone for a few minutes, the vessel which supplies the nose will contract and the blood will coagulate, and consequently cease to flow. The operation is easily performed, and in perhaps many cases, may save life.

Some eight years ago, a cousin of my own bled to death from hemorrhage of the nose, although two physicians who attended him did everything within their knowledge and power to arrest the bleeding and save his life. Notwithstanding all their efforts the blood continued to flow for twenty-four hours, until death terminated his life.

Since that time I have deeply regreted, and frequently thought it

strange that it was not in their power to save the individual's life. Had they known of this simple method his life unquestionably might have been saved. It is to be hoped that this brief article will prove a benefit to some individual similarly afflicted, through the medium of "*The Canada Journal of Dental Science.*"

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## PATHOLOGY OF INFLAMMATION.

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BY THOS. ROWE, M. D., COBOURG, ONT.

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*Read before the Ontario Dental Society at Belleville, July 28th, 1869.*

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Inflammation, from its frequency, and the widely differing circumstances under which it appears to rise, has been the subject of more investigation and discussion than the sum of all other diseases. By Celsus it was used to denote redness, pain, heat, and swelling, which form the sum and substance of our present definition, although they are nothing more than the symptoms resulting from a nervous disturbance, consequently, according to the present definition derived from *in* in, and *fiammo* a flame, it cannot be regarded as an elementary form of disease; but it is as such I am disposed to regard it, therefore I shall define the term according to my understanding of the mechanism of the disease, viz: Inflammation is a disease beginning as a vital lesion permitting congestion of the capillary blood vessels, producing exudation, and terminating either by resolution, organization, suppuration, or gangrene.

That we ever have inflammation without primary irritation there seems ground to doubt, but that we do have congestion from obstruction, aside from inflammation is also true, which congestion may produce a vital disturbance so that what commenced as a simple congestion may terminate in a destructive inflammation.

Bernard's experiment of dividing the sympathetic nerve, producing inflammation, tends to prove nerve force prevents this pathological condition, while on the other hand its absence permits its development; but experiments have not been carried far enough to determine the seat of the nervous force presiding over the circulation, though physiologists seem to agree in ascribing this function to the ganglionic nervous system, if so, any interference will cause more or less vascular disturbance. Inflammation frequently exists without materially interfering with the functions of the Cerebro-spinal nervous

system, and practice has also demonstrated that so called nervous persons are not the most susceptible to inflammation, as is exemplified by their receiving injuries giving rise to excessive pain without the inflammatory process being established.

When we place the web of a frog's foot under the microscope the currents of blood are seen moving in every direction with but slight interruptions, but on irritating a point the rapidity of the flow is decreased in the immediate neighbourhood of the irritated point in proportion to the extent and intensity of the application, the corpuscles become wedged in side by side until the flow is at last entirely arrested, while the blood is seen to move with increased rapidity through the neighbouring vessels. If weak irritants are used the arteries, veins, and capillaries are seen to dilate moderately, while stronger applications *speedily* dilate the vessels, the motion of the blood gradually decreases until it ceases to move, and becomes coagulated.

Hence it seems inflammation consists of stagnation of blood in the midst of increased flow, and the question naturally arises, what is its cause? Is it an atonic condition of the vessels, or a morbid condition of the blood, or both? That it is both, seems more than probable, for in the first place the vessels are seen to dilate and become more tortuous, and secondly there is multiplication of white globules, with increased adhesiveness; these white or lymph globules always entangling more or less of the red blood discs in proportion to the stimulant and health of the animal; as is well shown in frogs kept for experiment, for after much handling the result is obtained with less irritation. But the most striking phenomenon observed is the appearance of excessive formation of white blood globules in the part irritated, which some pathologists suppose is produced by an increased quantity of oxygen coming into contact with the protein contained in the blood, that this oxydized protein consolidates, forming corpuscles having oil globules for neuclei, the process being similar to that which takes place by bringing oil or milk globules in contact with serum, the globules taking on albuminous coats, the red blood discs supplying the oxygen for this purpose, which only obstruct the vessels when they become entangled by the white corpuscles, the current from behind forcing them forward and jamming them into the interstices between the white corpuscles until the vessels assume an uniformly red appearance, the liquor sanguinis being deposited outside by osmotic force, this action depending on a chemical affinity

subsisting between the fluid and the walls of the vessels, the obstruction being in a great measure due to excessive formation of white corpuscles and change in osmotic force.

In the great majority of cases inflammation causes tenderness and pain, often sympathetically affecting distant parts, suspending or altering the secretions. The first effusion from congested vessels is serous, causing swelling in complex tissues, collecting in quantities in serous sacs, or diluting the mucous on mucous surfaces, sooner or later there is exudation of fibrine, which either remains suspended in the serum or becomes partially organized into false membranes on serous or mucous surfaces, and swellings and indurations in tissues.

The microscopic researches of Addison, Magendie, Beale, and others, have thrown much valuable light on the subject of inflammatory effusions by observing the changes which take place in the web of the frog's foot, during the inflammatory process, showing that where the current of blood meets the greatest obstruction white globules make their appearance outside the vessels similar to the white globules of the blood, in addition to which, fibrine which rapidly forms into a mesh similar to the fibrillations of lymph which take place outside of the body, it is from this exudate that membranes and deposits are formed. When the congestion is slight the exudation relieves the vessels, but if continued and excessive, produces obstruction, by compressing the vessels and cutting off the nourishment of the part, until the connective tissue is finally absorbed, and its place supplied by the exudate. If exudation takes place slowly and is sufficiently supplied with life force, organizations are produced, which give rise to little or no trouble, unless they interfere with the functions of some important organ.

The redness of inflammation is due to crowding the capillaries with red blood discs, vessels too small to be seen with unaided vision, whose normal calibre would only admit a single file of red blood discs, with a little liquor sanguinis become enlarged, tortuous, varicose, and red through the excessive quantity of blood discs crowded into them, until the obstructed vessels appear like a mass of coloring matter, the impaction having obliterated the outlines of the discs.

The heat of an inflamed part is caused by the rapid and obstructed flow of blood, augmented by increased oxidation, but the local temperature is said never to exceed the central heat of the body.

Swelling arises from enlargement of the capillary blood vessels, and effusion into the connective tissue being more or less limited by

the tissue into which the effusion takes place. Serous membranes admit of but slight thickening, the exudate falling into the cavity of the sac ; while mucous membranes are more vascular, and subject to a greater amount of interstitial effusion, whereas the swelling of parts liberally supplied with areolar tissue is almost unlimited. Inflammation of the vascular organs causes great swelling, varying in firmness in proportion to the exudation of fibrine.

Pain is not always easily accounted for. Undoubtedly it frequently results from pressure by the exudate on nerve fibrils, at other times by pressure on tissues endowed with morbid sensibility induced by the inflammatory process, the sensibility of every texture in the body being increased by inflammation, bones and fibrous tissues, which are perfectly insensible in their normal condition, becoming exquisitely sensitive when inflamed ; the character of the pain differing in the different tissues, for example, the pain of inflamed bone is described as dull and aching ; in serous membranes, sharp and cutting ; while in the skin, and mucous membranes, hot and burning. Then again there are cases where the cause of pain is past finding out with our limited knowledge, being frequently referred to distant organs having little or no immediate nervous connection.

When inflammations are extensive, the entire functions of the economy become disordered, the respirations are quickened and the heart's action increased, the skin hot and dry, the appetite impaired, and the secretions changed in quality and diminished in quantity.

Inflammation in some way changes the blood crasis by increasing the fibrine and white corpuscles, the fibrine having a remarkable tendency to contract, and that in proportion to the intensity of the disease, these properties being better displayed in blood drawn directly from the inflamed than that from distant organs, proves the change is produced locally within the vessels. It has been affirmed that hyperinosis is the cause of inflammatory fever, which is contradicted by others who declare the fever precedes the increase of fibrine, for fever arising from an irritation such as cold or fatigue, becomes simple inflammatory fever as soon as the inflammation is pronounced. Therefore, it seems more probable the blue blood change depends on derangement of the nervous system, as shown by Bernard, and declared by Virchow ; but it is more difficult to understand why the circulation is so much increased when the appetite is lost, the strength diminished, and the secretions more or less suspended.

The terminations are either by resolution, organization, suppuration, or gangrene.

Resolution consists in removal of the obstruction, and absorption of the exudate which often takes place spontaneously ; at other times lingering, and yielding only to appropriate measures of treatment; at other times it moves rapidly from one part of the system to another, as in rheumatism. The resolution of any considerable inflammation is marked by great reduction of the temperature of the body, followed by or co-existing with copious perspiration and re-establishment of the secretions.

Organization is the formation of a new structure out of the inflammatory effusion, when the exudate is highly charged with healthy fibrine, or what has been denominated euplastic lymph, it is endowed with living properties sufficient to arrange its materials unto a texture needing a supply of blood for its support, but how it obtains it is still a mystery ; by some it is supposed that branches are thrown out from the varicose blood vessels which were the seat of the congestion ; while others regard them as original productions from blastema, which is a rational view, inasmuch as we know that both vessels and blood are formed in the egg without material connexion, which may also account for the large size of newly formed vessels, and their subsequent contraction after formation of their basement membranes.

Inflammation always denotes a diseased condition, consequently never takes place in a perfectly healthy animal, although it was for a long time considered necessary to the healing process, but we know that in healthy animals traumatic lesions heal without a blush of inflammation; the parts after having been brought into contact agglutinate together within a very short time, leaving scarcely a trace of the injury. But, if on the other hand a morbid condition exists in the system, inflammation is set up and a long tedious process of healing by granulation is the result ; therefore, if inflammation be ever necessary or beneficial to the healing process, it is when there is deficiency of plastic material in the blood, the disease having a tendency to produce the needed materials.

Suppuration is death and decomposition of the exudate and the tissue into which it is effused, forming "Pus," an opaque greenish white liquid composed of serum and cells which in form and size resemble exudation corpuscles, having cell walls and neuclei, and granules, which are nothing more than dead exudation corpuscles, having become non-adhesive and opaque through partial decomposi-

tion. That pyemia is ever produced by absorption of pus corpuscles is extremely doubtful, though it is not impossible that noxious fluids produced by decomposition may enter the blood by osmotic force, through the walls of the vessels, transforming the blood globules into pus corpuscles by depriving them of life.

Gangrene or mortification is death produced by starvation, either by deficiency in quality of the blood, or lack of supply.

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### CASES IN PRACTICE.

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BY G. V. N. RELYEA, BELLEVILLE, ONT.

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I deem it the duty of every member of the profession to do what he can to sustain our excellent Journal, and I therefore give my quota by relating my observations, operations and treatment of one patient.

In the latter part of the month of August, I was consulted by a Rev. Mr. Burnell, Missionary from Southern India, relative to some front teeth which had been filled with amalgam about a year before, by one of the natives. There was nothing peculiar about the filling, but my attention was at once directed to a front incisor pivot tooth, which the reverend gentleman informed me was inserted when he was fifteen years of age, and that his age now was forty-five, consequently it had been worn for thirty years. It had never been of much service in masticating, but had otherwise answered every purpose, and to all appearances it was good for thirty years more should he live to require it. May I ask whether any of the readers of the Journal have ever met with anything equal to that? I know of but one patient in my practice who has worn a pivot tooth for even twenty years.

I carefully removed the aforementioned amalgam fillings, with a view of replacing them with gold. The first incisor, (fellow to the pivot tooth,) was so much discolored by the amalgam filling that I was obliged to remove two-thirds of the crown, and also to destroy the nerve. Being limited in time, I was obliged to commence the operation of filling before the inflammation resulting from destroying the nerve had been allayed, indeed there was sensitiveness internally and externally, and he suffered much during the operation, but I deemed it advisable to persevere, and rely upon my skill in controlling the inflammation after the operation should it become necessary. The time of filling was one hour and a quarter, and the pain so severe

that the perspiration rolled from him at times, but he bore it manfully, and I had the proud satisfaction of seeing a superior filling, built out to resemble the shape of the pivot tooth. After the operation the pain ceased in part, and I sent my patient away with directions (after painting the gums with a tincture of iodine and aconite,) to use cold applications should the pain increase. The next morning he walked in and assured me that he was "all right," and as he viewed his tooth in my hand mirror he said, "I would not take fifty dollars for my tooth."

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### GREEN LINE ON THE GUM FROM COPPER POISONING.

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BY DONALD FRASER, M. D., MONTREAL.

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Trusting that the following may not be without interest to your readers, I crave indulgence for a small space of your valuable Journal, for its insertion. Some six or seven months ago, I was kindly shewn by Dr. Gervis, Assistant Physician to the St. Thomas' Hospital, London, England, a patient suffering from chronic poisoning by copper. *A green line on the gum*, analogous to the blue line seen in cases of poisoning by lead, was distinctly visible. The patient was a sailor just returned from a long voyage, and had received the poison through the medium of the lime juice which had been kept in a copper vessel. This was the second case of the kind which had come under the notice of this gentleman, who is, I believe, the first to notice the fact.

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### PROCEEDINGS OF SOCIETIES.

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#### THE AMERICAN DENTAL ASSOCIATION.

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BY W. C. HORNE, D. D. S., NEW YORK.

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The ninth annual meeting of the American Dental Association was held at Saratoga Springs, New York, commencing on Tuesday, August 3, 1869. There was an attendance of one hundred and thirty-six members.

The Association was called to order at 11 o'clock by the President, Dr. Jonathan Taft, and the session opened with prayer by the Rev. John Woodbridge, D.D.

Dr. J. G. Ambler, of New York, Chairman of the Committee of Arrangements, delivered the usual address of welcome; which was followed by the roll-call.

The reading of the minutes was commenced, but dispensed with before it had proceeded far.

The Report of the Committee on Dental Pathology and Surgery was presented and read by Dr. Atkinson.

The hours of business were then appointed, and an adjournment taken to 3 o'clock. The whole of the afternoon session was occupied with discussions upon Dental Pathology and Surgery.

#### SECOND DAY.

The Treasurer presented his report, which was referred to an auditing committee; and the discussion on Dental Pathology and Surgery was resumed.

The Committee on Dental Chemistry failing to report, Dr. T. L. Buckingham made, by request, a verbal report.

The rules were now suspended to allow Professor Truman to offer two resolutions: one directing the Treasurer to refund certain dues claimed to have been illegally demanded; and the other recommending dental societies to admit female practitioners to membership. The resolutions were temporarily laid on the table.

The discussion upon Dental Chemistry ensued; after which the time of final adjournment was fixed at 5 o'clock of Friday.

At the opening of the afternoon session Dr. C. R. Butler presented the report of the Committee on Operative Dentistry. The rules were then suspended, and the following Nominating Committee was appointed, and instructed for the present, to nominate the standing committees only:

W. W. Alport, C. E. Francis, M. S. Dean, T. L. Buckingham, Homer Judd, L. D. Shepard, A. H. Brockway, A. L. Northrop, C. W. Robinson.

The regular order being resumed, Dr. C. Palmer made an additional report on Operative Dentistry, illustrated by large diagrams and models of the superior and inferior dental arches; and Dr. Perkins presented a patient who had lost the entire inferior maxilla from phosphor-necrosis.

The Auditing Committee, consisting of Drs. M. S. Dean, E. A. Bogue, and L. D. Shepard, to whom the Treasurer's account was referred, reported it to be correct. They expressed the opinion that permanent members consist of all those who have once attended as delegates, and that such persons remain permanent members until, their dues being paid in full, they voluntarily withdraw, or are dis-

honorably dropped from the rolls for non-payment of dues. They also recommended the adoption of the following resolution :

*Resolved*, That a dentist having once appeared as a delegate, and become a permanent member, is not eligible to act again as a delegate until his dues are paid in full.

After a sharp debate this resolution, on a call of yeas and nays, was adopted by a vote of 29 to 28 ; the President voting in the affirmative.

By permission, Dr. Horne changed his vote to the affirmative ; after which he moved a reconsideration, which was rejected.

### THIRD DAY.

Dr. H. Judd presented the report of the Publication Committee, which showed a balance of \$152.78 to be due them. The Committee published five hundred copies of the Transactions for 1868, at a cost of \$475. The report was accepted, and the Committee discharged, with the thanks of the Association, and the balance due ordered paid.

The Nominating Committee reported the names of Standing Committees for the ensuing year. The report was recommitted, with instructions to make certain changes, and to nominate officers.

Dr. Atkinson offered a resolution to refer to the Committee on Dental Literature a new work of Dr. J. E. Garretson, entitled "Diseases and Surgery of the Mouth," which he commended very highly, as the last and most accurate statement of the condition of medical knowledge in this department. The Committee declined to consider the subject, from lack of time, and the resolution was laid on the table.

The Committee on Prize Essays made the usual report, that nothing had been presented for their consideration.

Discussion upon Operative Dentistry was then commenced, and occupied the rest of the morning session.

At the commencement of the afternoon session, after much balloting, the City of Nashville was selected as the next place of meeting.

Dr. Morgan said he wanted every member of the Association to feel that he was bound to be present at the next meeting in Nashville. He related of Professor Agassiz, that on being requested to visit various cities to lecture, he replied that he had not time to be running about making money, he had more important business to attend to. He (Dr. M.) desired members to feel that it was of more

importance to them to attend the annual meeting than to stay at home to make money.

Dr. Atkinson said he had been requested by Dr. Evans, of Paris, to say that he had expected to be present at this meeting (having been mistaken as to the date of its session), but that he had to return to Paris to be present on the fete day of his pet emperor. He had been greatly pleased with what he saw of Dr. Evans during his short stay ; he was one of the few men who could be petted without being spoiled ; he had received, without solicitation, many orders of knighthood ; and he (Dr. A.) indorsed him as a Christian and a scholar. Though dwelling so long in a foreign land, he had maintained his loyalty to American principles and American dentistry, and he desired to be so recognized by his fellows in this Association.

The Committee on Nominations then made the following report :

#### FOR OFFICERS.

*President*.—Homer Judd, St. Louis ; W. W. Allport, Chicago.

*First Vice-President*.—S. J. Cobb, Nashville ; J. F. Knapp, New Orleans.

*Second Vice-President*.—C. E. Francis, New York ; W. H. Shadoan, Louisville.

*Corresponding Secretary*.—I. A. Salmon, Boston ; H. J. Smith, Illinois.

*Recording Secretary*.—W. C. Horne, New York ; M. S. Dean, Chicago.

*Treasurer*.—W. H. Goddard, Louisville.

#### STANDING COMMITTEES.

*Committee of Arrangements*.—W. H. Morgan, S. J. Cobb, W. H. Shadoan.

*Committee on Publication*.—M. S. Dean, E. A. Bogue, J. Taft.

*Committee on Prize Essays*.—G. T. Moffatt, J. F. Adams, H. G. Mirick, S. M. Cummings,

*Committee on Dental Physiology*.—J. H. McQuillen, Jas. Truman, H. F. Bishop.

*Committee on Dental Chemistry*.—T. L. Buckingham, John Allen, G. R. Thomas.

*Committee on Dental Pathology and Surgery*.—W. H. Atkinson, J. S. Knapp, C. R. Butler.

*Committee on Operative Dentistry*.—J. Taft, George H. Cushing, Corydon Palmer.

*Committee on Mechanical Dentistry.*—W. H. Eames, S. B. Palmer, Z. Cotton, L. M. Sturgis.

*Committee on Dental Education.*—M. S. Dean, J. N. Crouse, S. J. Cobb.

*Committee on Dental Literature.*—L. D. Shepard, J. McManus, H. J. Smith.

*Committee on Voluntary Essays.*—I. J. Wetherbee, C. D. Cook, L. S. Straw.

*Committee on Dental Histology.*—Homer Judd, W. W. Allport, R. W. Varney.

*Committee on Dental Therapeutics.*—T. B. Hitchcock, C. N. Pierce, G. F. Waters.

*Committee on Dental Instruments and Appliances.*—Frank Abbott, A. M. Holmes, J. B. Morrison.

The Standing Committees were confirmed. An evening meeting was then ordered to receive the report of the Committee on Amendments to the Constitution.

At 8 o'clock the evening session was opened, and the above-named report read and accepted. After various motions to adopt, to recommend, etc., the whole subject was laid on the table.

An election of officers was then held.

Drs. Judd, Morgan, and Allport were voted for, and, after several ballots, Dr. Homer Judd was elected President; Dr. S. J. Cobb and Dr. C. E. Francis, Vice-Presidents; Dr. I. A. Salmon, Corresponding Secretary; Dr. M. S. Dean, Recording Secretary; Dr. W. H. Goddard, Treasurer.

The Association then adjourned to the next morning.

#### FOURTH DAY.

A committee of five was ordered to make arrangements for reduction of railway fares to Nashville next year, namely, T. L. Buckingham, I. J. Wetherbee, E. A. Bogue, G. H. Cushing, G. R. Thomas.

Dr. McQuillen, Chairman, of the Committee on Histology, made a verbal report, accompanied by a number of microscopical specimens recently prepared by him. 1, of injected pulps of calves' teeth; 2, of the kidney of the sheep; 3, of the muscles of three persons who had died within the past year of trichiniasis, along with a portion of the pork, containing trichinæ, which had caused the disease in one of the deceased; after which the subject was discussed.

The report from the Committee on Mechanical Dentistry was pre-

sented by Dr. John Allen, who regretted that, while the operative branch of dentistry had advanced so much within a few years, in this department the general course of dentists had been to make the cheapest instead of the best work. The difficulty of obviating the discrepancy between the mouth and the dies made from the impression was admitted, but the idea of remedying this by resorting to a plate of lighter material was controverted as false in principle, which was exemplified by the simple experiment of a sheet of paper supported upon the mouth of an inverted tumbler full of water. There is demand, then, for a process which shall ensure mathematical accuracy in the fitting of the plate; as well as great need of skill in the arrangement of teeth to conform with the characteristics of the face.

He was followed by Dr. S. B. Palmer, of Syracuse, with an essay on "Repairing Vulcanite," and by Dr. J. A. McClelland with an essay on the "Collodion Base."

The essay of Dr. Palmer is explanatory of a method of thoroughly repairing broken rubber-plates by varnishing the surfaces, to which the new rubber is to be attached, with a creamy solution of rubber in chloroform; to be kept on hand for such use. He states that repairs made in this way are perfectly reliable, even if the broken edges are only beveled, without dovetailing or perforating the old piece. Wax, gutta-percha, oil, or soap are agents which prevent rubber from being vulcanized, and they should, therefore, be carefully kept from contact with any piece to which it is intended to apply this process.

The essay on "Consolidated Collodion, Pyroxlin, or Rose Pearl," is an enthusiastic description of the method of preparing that material for use in dental plates. It is prophetically characterized as "the coming base." The time required for the evaporation of the ether seems to be an inconvenience, "because we have become so demoralized in our ideas of time by the use of a cheap substance (rubber) that requires but a few hours and little skill to make into plates." "In practice the time required for 'Rose Pearl' to fit *herself* for the mouth is soon regarded as gain rather than loss." The shrinkage of the material is said to be controlled by such simple means that the cry, "It shrinks!" becomes one of ridiculous insignificance to the friends of "Rose Pearl."

Dr. Corydon Palmer exhibited an improved moulding flask, and explained its advantages in difficult cases. A vote of thanks to Dr.

Palmer was passed (which the Secretary was instructed to have handsomely engrossed) for the manner in which he had presented, by means of plaster models and diagrams, an advanced method of preparing and filling teeth, and an appropriate classification of fissures where teeth are most liable to decay.

The report of the Committee on Voluntary Essays was presented and adopted.

Dr. M. S. Dean, from the Committee on Dental Education, presented a report on the importance of a thorough preliminary education for dental students, and was followed by Dr. S. B. Palmer, with an essay on "Dental Education for the People."

Dr. Palmer advocated the diffusion of knowledge in regard to the preservation of the dental organs by means of tracts or periodicals. He believed there was great necessity for such information, and that it would be highly appreciated.

Dr. Cobb indorsed the sentiments of the essayist; he was greatly impressed with the ignorance of educated people in regard to their teeth; all that the community know in regard to such matters is the little information they pick up in the dentists' offices. He held it to be the duty of practitioners to instruct their patients. Many more people would have their teeth preserved if they knew that it was true economy to do so. He strongly commended the plan of the *People's Dental Journal*, and was much in favor of the distribution of tracts to increase popular dental knowledge. There would be vastly more dental work done if people knew the importance of it; something in the form of a catechism, or instruction which might be introduced into schools, was a *desideratum*. No branch of knowledge was more neglected, and none would insure more immediate good results by its propagation. It was a common idea that the charges of dentists were exorbitant, whereas they were far more moderate in proportion than those of physicians and general surgeons.

Dr. McDonald advocated the preparation of tracts, under the auspices of the Association, for distribution among the people. Early instruction in regard to the value of the teeth, and proper means of caring for them, would be of immense value to the American people and to American dentists. A great many more teeth would be filled, but there would eventually be a great many less large operations to be performed, and, consequently, a great deal better condition of the teeth might be insured at much less expenditure of money.

The Committee on Dental Literature had no report.

The Committee on Dental Therapeutics made a very brief report by Dr. Bogue.

The report of the Committee on Dental Instruments and Appliances was presented by Drs. F. Abbott and C. Palmer. They noticed improvements in dental chairs by J. B. Morrison and O. C. White; a plating for instruments of pure nickel, by M. M. Johnson; an instrument for rolling gold foil, by J. B. Adams, of Worcester; an instrument for regulating heat in the manufacture of nitrous oxide, where ordinary burning gas is used, by J. P. Coolidge, of Boston; clamps and buttons to close the duct of Steno, by B. T. Whitney; a pneumatic mallet by W. H. Jackson, of Ann Arbor; an improved regulator and heater where kerosene is used in making nitrous oxide, by A. W. Sprague; burs of fine steel, by S. S. White, regularly divided and evenly cut, which, instead of being left with the file finish as in ordinary burs, are, after hardening, finished with a stone to an edge as fine as a lance-blade, so that in the hands of a sufficiently skilful operator they will cut with the least possible pressure, avoiding almost entirely the unpleasant sensation of ordinary burs; artificial teeth, by S. S. White, which the Committee stated were the finest they had seen, in their expression, and proportion between the upper and lower sets; nitrous oxide, ether, and chloroform inhalers, by Dr. Wilson, securing greater safety in the use of these inhalers by insuring perfect control of the supply of atmospheric air, in well defined proportions.—*Cosmos*.

(To be continued.)

#### ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

Annual general meeting, January 11th, 1869.

James Parkinson, Esq., President, in the Chair.

The minutes of the last meeting having been read and confirmed, Mr. Francis John Vanderpant, of Clifton Lodge, Kingston-on-Thames, was elected a member.

Mr. J. Dennant, Western Cottage, Brighton; and Mr. Arthur Baxter Visick Ravensdowne, Berwick-on-Tweed, were proposed for election.

Mr. Edward Hume, of Gower street, presented a fine specimen of the saw-fish, *Pristus*.

Mr. Bartlett presented 2 vols. Rowley's '*Scholæ Medicinæ*,' 2 vols. Murray's '*Chemistry*,' 1 vol. Clarke, '*On Management of Teeth*,' 1 vol. South, '*On the Bones*.'

Mr. Charles James Fox exhibited some large bottles of compressed gas, made for him by Messrs. Coxeter & Son, of Grafton street Tottenham Court Road, whom he had induced to take the matter up and supply the profession with them. The held respectively 6 and 12 cubic feet of nitrous oxide; he also exhibited an improved Clover's face-piece. Also, an inhaler made for him by Mr. Coxeter by which the admission of atmospheric air could be regulated.

Mr. Hulme, curator, then read a paper on "The Formation and Arrangement of a Dental Museum," of which the following is an abstract:—

Mr. Hulme said, in forming a museum intended to illustrate any special branch of natural history, the scope and limits of the subject must first be determined. This must be done in a wide and comprehensive spirit.

The comparative anatomist classed the teeth with the skeleton; the physiologist regarded them as forming a portion of the digestive organs. But to include the whole of the digestive organs, and their various modifications throughout the animal kingdom, would be to extend the museum beyond what could properly be termed a Dental museum, and, therefore, the specimens must be confined to illustrating the history and modifications of those organs which are concerned in performing the mechanical portion of the process of digestion.

A museum for Dentists must necessarily contain:—

1. Preparations to illustrate fully the anatomy, physiology, and pathology of the human teeth, and also of the parts which are influenced by Dental diseases.
2. Surgical instruments.
3. Mechanical appliances.
4. A series of preparations illustrating the physiology of the teeth, or the general laws which regulate their development, growth, and structure.
5. The comparative anatomy of the teeth, for without means of studying the varieties of Dental development presented by the lower animals, the knowledge which could be acquired of the physiology of the teeth would be extremely limited.
6. The microscopic structure of the teeth, and the changes which their tissues undergo in disease.
7. A separate department devoted to the teeth of animals indigenous to Great Britain.
8. Instruments employed by the Invertebrata in procuring and communicating the food might be added if it were desired to complete the subject, and to give the entire history of the cibarial instruments throughout the animal kingdom.

Having determined the scope and limits of the museum, the next

object was to ascertain the best method of arranging the specimens. The last two divisions being only suggested as additions to be made at some future time, did not on that occasion demand attention; while the manner in which the first four divisions should be arranged was so far evident that it was unnecessary to enter into details with regard to them. The microscopic specimens should follow the comparative anatomy series, and it was, therefore, the arrangement of this important division of the museum which had to be considered. The question was whether the same order and arrangement must be followed, as the naturalist has adopted from the study of the other organs, or whether the teeth could be taken as a basis of a classification without violating the natural affinities of the different families and orders belonging to the vertebrate sub-kingdom, and more especially of those which constitute the class Mammalia.

In order to answer this question, Mr. Hulme next entered upon a most able and elaborate examination of the comparative anatomy of the teeth, and also of the different modes of zoological classification adopted by Aristotle, Ray, Linnæus, Cuvier, Owen, and Huxley.

In most fish the teeth closely resembled each other, and exhibited little difference in either their form or their function, excepting that those at the anterior part of the mouth might be adapted to seizing and holding the prey, while those at the posterior part might serve to lacerate and crush it, as exemplified in the tessellated jaws of the Cestracion Philippi or Port Jackson shark. The only use which the naturalist had made of the teeth in the classification and arrangement of existing fishes had been to designate some two or three families from certain peculiarities in their teeth. When defining the minor groups into which the primary divisions of the class are sub-divided, the teeth even in the fish often afforded useful and readily ascertained characters, by which the different genera might be distinguished from each other, or by which individuals belonging to the same family might be brought together.

Similar remarks would also apply, although in a somewhat diminished degree, to the class Reptilia, in which therefore, the teeth could not be relied upon to any great extent for the purpose of classification.

Passing to the class Mammalia, Mr. Hulme pointed out that anatomical and structural peculiarities had been commonly adopted by the eminent authorities cited, as a basis of classification. To this there was one obvious and practical objection, namely, that in the case of a newly discovered animal, it was only after careful dissection that



In the Monoidodonts the teeth were either absent or were of one kind only, consisting of those which were developed in the maxillary bones and in the corresponding portion of the lower jaw. This division contained two orders, Bruta and Cetacea.

The order Bruta included the Ant-eater (*Myrmecophaga*, Lin.), the Scaly Ant-eaters or Pangolins (*Manis*, Lin.), these were edentulous—the Armadillos (*Dasypus*, Lin.), the Orycterope or Cape Ant-eater (*Orycteropus*, Geof.), the Sloths (*Bradypus*, Lin.), together with the extinct Megatherium, Mylodon, Glyptodon, and some other allied forms which had been found in the diluvial deposits of the American continent.

In the Diidodonts only two kinds of teeth were present, namely, incisors and molars. These teeth were separated by a considerable interval from each other, the canines never being developed in the animals which composed the orders belonging to this group. This division included the Sirenia, or herbivorous Cetacea, the Proboscidea, the Rodentia, and what he had ventured to term the order Rhinocœrina.

The third and last division was, that of the Triidodonts, in which three kinds of teeth were present—Incisors, Canines, and Molars. This division included seven orders, viz:—Pachydermata, Ruminantia, Cervidæ, Canclidæ, &c. &c.

Mr. Hulme examined seriatim the dentition of each order, and of each sub-division, in order to justify the classification which he had adopted.

In conclusion, he observed that the proposed classification had originated in his endeavours to ascertain the best means of arranging the specimens in the museum, so as to exhibit not only the characters of the teeth in each species, but also the relation in which these organs stand to the general plan of animal organization.

The object of every classification should be to embody, in a clear and simple manner, the actual knowledge which is possessed of the animal kingdom, or of that portion of it with which the classification is concerned. To what extent this might be considered to be fulfilled by the classification that had now been proposed must be left to the judgment of others. It at least possessed the important qualities of clearness and facility of application. The arrangement of the different orders did not differ materially from what had been previously adopted by other writers. The relation in which the teeth stood to the general organization of the animal was brought more prominently

forward, and the classification, although it should not be accepted for the general purposes of the zoologist, would seem to be well adapted for arranging the specimens in a Dental museum.

At the conclusion of the paper, Mr. Vasey expressed his thanks to the curator, and urged members to contribute such specimens as they had to the Museum of the Society.

Dr. Murie expressed his pleasure with Mr. Hulme's paper. Though he differed from him in some points, he thought that a proper arrangement of objects was of more importance than the gathering together of a large collection. In conclusion, he paid a warm tribute of praise to the zeal and enthusiasm of Mr. Hulme in his work, and considered he had done good service to the Society by bringing this matter forward.

Mr. Hulme, in reply, thanked Mr. Vasey and Dr. Murie for their remarks; it seemed to him that the only way in which he and Dr. Murie differed was that whilst Dr. Murie viewed the matter from a purely scientific point of view, he considered that objects relating to Dental practice should take precedence of simple natural history in a Dental museum.

Mr. Harrison, the Treasurer, read the financial report, which showed that the Society's receipts for the year ending October 31, 1868, were £370 13s.; expenses, £360 2s. 10d.; the entire assets of the Society having cost £276 9s. 7d.; stock, £663 12s. 2d. There were 89 resident—144 non-resident members; total, 233 paying members, besides 46 honorary or corresponding members.

The usual course of election having been followed, the following gentlemen were declared elected officers and councillors for the year 1869.

*President.*—H. J. Barrett, Esq.

*Vice-Presidents.*—Resident: R. Hepburn, Esq., Arnold Rogers, Esq., John B. Fletcher, Esq. Non-resident: S. L. Rymer, Esq., Croydon; P. Orphoot, Esq., Edinburgh; George T. Parkinson, Esq., Bath.

*Treasurer.*—W. A. Harrison, Esq.

*Librarian.*—Alfred Coleman, Esq.

*Honorary Secretaries.*—Ordinary: Edwin Sercombe, Esq.; Charles James Fox, Esq. For Foreign Correspondence: John Drew, Esq.

*Councillors.*—Resident: G. Gregson, Esq.; C. Vasey, Esq.; Edwin Saunders, Esq.; A. Hockley, Esq.; J. Walker, Esq.; Isaac Sheffield, Esq.; J. W. Elliot, Esq.; Thomas A. Rogers, Esq.; W. G. Bennett,

Esq. Non-resident: R. Ransom, Esq., St. Leonards; H. Campion, Esq., Manchester; H. Morley, Esq., Derby; J. Steele, Esq., Croydon; J. S. Coles, Esq., Plymouth.

Mr. James Parkinson, the retiring President, then delivered his valedictory address. After reviewing the financial statement, and speaking in the warmest terms of the obligation the Society were under to Mr. Harrison, their Treasurer, not only for the way in which he had performed the *duties* of his office, but for the care and attention he bestows on the interests of the Society at *all* times, he spoke feelingly of the loss the Society had sustained by the deaths of three members—Mr. Fox, of Barnstaple, Mr. Winterbottom, and Mr. Josiah Saunders. He then alluded to the great services rendered to the Society by the retiring Librarian, Mr. Fletcher, whose loss was only compensated for by the reflection that in Mr. Coleman he possessed a successor whose talents, education, and unwearied industry, eminently qualified him for such an office. He then reminded the Society of Mr. Ibbetson's munificent gift of a gold medal to the value of twenty guineas, to be awarded to the best essay on "The Histological Structure of the Human Teeth." He then spoke of the onerous duties of the secretaries of the Society. He regretted the retirement of Mr. Drew who, for a period of three years had diligently and intelligently laboured for the honour and welfare of the Society; but congratulated the members on the election of Mr. Sercombe, in whom they would have the right man in the right place. He alluded to the exertions of Mr. Fox on their behalf, thanking him especially for the attentive consideration he had always given to the wishes of the President; as Mr. Fox still held office he would say no more. To Mr. Charles Rogers, the Hon. Foreign Secretary, he offered his kind thanks for the services he had rendered to the Society during his past official career. He then spoke rather severely of certain gentlemen who retired from the Society without paying the arrears of their subscription, and pointed out that in such cases they could not be considered to have retired, but placed themselves in the position of having their names erased from the list as defaulters. He then reviewed the papers of the past year, and ended by expressing his thanks to the Council and the members of the Society for the support he had received during his year of office.

A vote of thanks to the retiring President having been then proposed by Mr. Thomas Rogers, and carried unanimously.

Mr. James Parkinson briefly acknowledged it, and the Society adjourned.—*British Journal of Dental Science.*

## THE QUINTE DENTAL ASSOCIATION.

BY S. T. CLEMENTS.

A meeting of the Dental profession was held at the Campbell House, Napanee, on the 31st of August, for the purpose of consulting together in regard to the interests of the members of the profession in this section of the country.

G. V. N. Relyea, Esq., was elected Chairman, and S. T. Clements, Secretary.

On motion of B. W. Day, M.D., seconded by L. Clements, Esq., it was, *Resolved* that we form ourselves into a society called the "Quinte Dental Association," embracing the territory from Cobourg to Kingston, inclusive.

It was then resolved that the members of this Association be empowered to appoint a detective in their respective places of practice, to bring to justice any person practicing dentistry within the limits of this Association illegally, and that such expenses shall be paid by this Association.

After considerable discussion on a Dental Tariff of Fees, the Association finally adopted one, which will be forwarded for publication as soon as all the dentists in the territory embraced have signed it.

Adjourned to meet in Belleville, on the 1st of March next.

## EDITORIAL.

## "SUBJECTS OF HER MAJESTY."

We call the attention of our readers to the following clause of the proceedings of the Dental Board at its last session, viz: "Mr. O'Donnell moved, seconded by Mr. Wood, That application be made to the Legislature of Ontario, at its next session, (in accordance with a notice given yesterday,) to add a clause to the Act respecting Dentistry, empowering the Board to confer the degree of Fellow of the Royal College of Dental Surgeons, of Ontario, on dentists entitled to the same by merit, living out of the Province, and being *subjects of Her Majesty*".

It is the words in italics to which we wish to direct attention. While this subject was under discussion by the members of the Board, we objected to that portion which compels a man, no matter how learned, no matter how clever, no matter how much he may have contributed to the great fund of dental knowledge, if he be not a British subject

by birth, to become one by naturalization before he can be entitled to any honors at the hands of our Board.

Two years ago when our Act was drawn up, we took exception to that part of it, but, as the members of the profession were so much divided on the subject of obtaining a law at all, we did not think it advisable to agitate the question at that time.

We got our Bill through Parliament, and a very good Bill it is too, in the main, and much as we dislike this one clause, we do not urge its repeal at the present time. We thought then, and still think, that it is, in respect of citizenship exceedingly illiberal. We invite American dentists to visit our Associations, and we listen very attentively to all they say, and urge them to say more *that we may learn something from them*, but if one of them who could *teach* the best of us, were to wish to come here to practice, he could'nt do so, because he must remain idle for three years before he could take the Oath of Allegiance.

In every one of the States which has passed a law regulating the practice of dentistry, there is no mention made of citizenship. Every man, of whatever nation he may be, is allowed to practice his profession, provided he can convince the Board of Examiners that he is qualified to do so. Several of the licentiates of our Board, thinking, no doubt that they can do better there than here, have availed themselves of the liberality of their law, and are now practicing in different parts of the States. Others we hear, are preparing to follow them. So far as we are aware not a single dentist has come from the States to this Province since the passing of the Act.

The proposed amendment, as we understand it, is not intended to enable the Board to grant the privilege of practicing dentistry in this Province, but, is to be given to those who have, by their superior attainments in the dental art, been able to confer great and lasting benefits upon the whole profession, as a mark of honor. If it is to be conferred only on British subjects, it would seem to be almost folly to ask Parliament to give us the power to grant such a degree, as there are not more than three or four dentists now living who would be entitled to it. It is well known that nearly all the great men in the profession are either in the United States now, or are natives of that country. Nearly all the books which have been written on dentistry have been written by Americans. In fact, all the dental books to be used in the College to be opened next month, with one exception, are the productions of American authors. We

are as well pleased to see men stand up for their country and fellow citizens on all proper occasions as any one can be, but we do think that the confining of this degree of "Fellow" to British subjects, is carrying loyalty altogether too far, and we do not believe it will be the wish of the dentists of the Province that it shall be so restricted. It will soon be time for the Legislature to assemble, and we hope that every dentist will speak his mind fully in regard to it. We shall be most happy to open our columns to any one on the subject, either for or against the proposition.

C. S. C.

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### QUACKERY RAMPANT.

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Such is the "gullibility" of a large class of persons needing Dental operations, that the greatest ignoramus may easily win popularity and patients, if he has but the audacity to advertise himself as the concentration of all that is wise and excellent, and the boldness to raise the motto of "cheap work." Let a man modestly assert his capabilities, and he is passed by on the other side by a class of people who would flock to him were he but to assume a superiority never on earth before, and a scale of prices a few dollars below the average charges. No mere sticking to every-day truth will do. Good big whopping lies win the mass.

Since the time of the great "Succedaneum" impostors, in dentistry there has not been such wholesale deception of the public limited to the practice of one or two individuals; but that there are as dishonest quacks in the profession to-day as in the time of the Crawcours, is a fact of which we may assure ourselves by looking over some of our daily papers. The following advertisement, taken from a Montreal paper, is about the best specimen of this "dental literature" we have seen for some time, and our readers may judge of it better, when we tell them that some other dental charlatans in the city are positively ashamed of it. We cite this case to show how the ranks of our profession were filling up, and also to convince the doubters that the legislative efforts in Canada were just in the nick of time to prevent an addition of such infamous impostors. The advertisement, full of disgusting quackery, and bad grammar, is certainly degrading to the profession, and sufficient, without any other evidence, to put the advertiser down as an impostor. A few months ago he canvassed the dentists of Montreal, asking employment to do the rough and dirty work in the laboratory. His recommendations were that he

had been manufacturing rubber goods, such as balls, combs, &c., and having failed, he had determined to turn his attention to dentistry. From the rubber works to the surgery at one jump! Being well snubbed for his impudence he gave up the search, and managed to hang out his own shingle. This "*perfect* expert in the art of dentistry" is one of the best evidences we can have of the need for our Act of Incorporation. The curse of the introduction of vulcanite is that such glaring quacks are so easily tempted to become "Dentists:"

"HAPPIEST OF ALL are those getting their aching teeth extracted by ————— new process of nitrous oxide. In this there is no pain or danger, and only fifty cents for the operation of a tooth. This gentleman is a perfect expert in the art of Dentistry. The very best families of the city are availing themselves of his skill and moderate charges. Ten to fifteen dollars guarantees perfect satisfaction or no pay for a set of teeth for which other good operators charge forty. His superior facility enables him to give a perfect set of teeth in less than five hours time.

The large number of happy faces leaving this establishment every day with new teeth, having their deformed features restored, to be met by husbands and admirers of the beautiful, speak of this place in the loudest encomiums. The children all say they will let no one pull their teeth but Mr. —————."

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JOURNAL OF THE GYNÆCOLOGICAL SOCIETY OF BOSTON.—Devoted to the advancement of the knowledge of the diseases of women. Edited by Winslow Lewis, M. D., Horatio R. Storer, M. D., George H. Bixby, M. D. Sixty-four pages, octavo, monthly, \$3 a year in advance. We have received the above valuable periodical, and have much pleasure in recommending it to the medical fraternity, and those members of our own profession whose inclinations lead them outside of the pale of Dentistry into such specialties as this Journal represents. Undoubtedly it will prove of exceeding great value in its own sphere, and the names of the editors are sufficient guarantee that it will be conducted with ability.

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GOLD FOIL ROLLER.—We have to thank Mr. Chandler for a gold foil roller, a very convenient little instrument for bringing foil into shape for filling, without contact with the fingers. We would suggest a piece of fine chamois-skin, however, in place of the rubber.

## MISCELLANEOUS.

## WEDGING BETWEEN TEETH.

We commend great caution to our brother practitioners in reference to wedging between the centrals. We must always keep in mind that there is a suture between the palatal bones in the median line, and if this is forced open by a little undue violence, or a little hasty action, we have done more mischief than we can repair in a life time. We were never friendly to wedges when we could avoid them, but sometimes the use of them is imperative. At any rate the file has had its day, and we are not shocked by the opening, looking like an ugly V, that we once were accustomed to see between the molars and bicuspid in former days.

When we have a cavity to fill which is cervico-approximal the best plan is to drive a properly fashioned wedge of orange wood in, very near the gum. Next select a wedge a little wider than the first and drive it steadily down between the crowns, and in three or five minutes enter and drive another (get this one of hickory and let it be of the shape best adapted to the purpose), and drive it between the crown wedge and the approximal surface of one of the teeth you intend to fill. This, of course, loosens the cervical wedge and it must be replaced by a thick, narrow wedge which you design to remain in while operating upon the cavity. The great point to be gained is to acquire sufficient knowledge of the amount of force to be used. If too much is used you will cause needless pain and do serious damage. When we have obtained sufficient power over the subject to do all well, we urge upon the experienced operator the necessity of wedging as *rapidly as possible*. We admit that doing the wedging quickly causes a little more pain than when it is done more slowly, but any little soreness left upon the teeth may be removed by tincture of arnica, applied to the cervical portions of the teeth, which places it in contact with the pericementum and the periosteum of the alveolar process. When we have several teeth to fill, operations by wedging may be commenced on those at a distance from the tooth we begin to fill, in this way we allow time for the wedges to swell, and the teeth may part.

And here we urge upon our young friends the strong necessity for making longitudinal and transverse sections of all the teeth that may come into their hands. The odd half hours, so often left to go to waste by the young dentist, cannot be better employed than in

making himself acquainted with the anatomical location of the pulp cavity ; the thickness of the walls, and the various processes, horns, etc. A bungling surgeon who would cut the carotid artery, through ignorance of anatomical knowledge, would have permission to retire from the society of gentlemen. And the dentist who from carelessness or ignorance of anatomical laws, should expose a pulp when filling a cavity when the disease has not reached the cavity, or who should expose a pulp when shaping a cavity, should have permission to retire from the profession. Alas ! it pains us to think how many bungling acts have been "done in the dark" by thoughtless members of the profession. Know what the arrangement of the building is before you begin to repair it. You may kill the tenant by your mad cutting.—*Dental Office and Laboratory.*

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DR. ROBINSON read an essay before the Michigan Dental Association, on "The Best Method of obtaining a Good Reputation as a Dentist," claiming that in dentistry, as in every profession, the first requisite toward establishing reputation or character is true manhood and adaptation—being suited to your calling. The next requisite is humility. I do not mean that we should distrust ourselves and our abilities, and be doubting and timid in our professions, but have humility enough to learn of the weakest person who has any information on any subject we desire to know, and at least be humble enough to be always trying to keep up with every new improvement of the age. The next requisite is courage—not boldness, or impudence, that sometimes passes for courage, but that which will enable us to be patient under discouragements ; to give our best efforts to those who employ us ; to be clean and neat ; to make over a set of teeth that is not fit to be worn ; to take out a poor filling and replace it with a better—in fact, to be true to ourselves, and not dishonor our profession through ignorance or carelessness, or vain pretensions of doing what we do not understand. Lastly, we must have singleness of purpose—if we have but one talent, let us concentrate that upon our profession—we must do that to establish a good reputation in any department. Very few persons have arrived at any degree of excellence without a steady and steadfast purpose in a single direction. We must also *love* our profession ;—we all follow whatever we really love. We cannot extricate ourselves from our loves. We are absolutely forced to think and talk of what we really love. Then let us love our chosen work ; and, without assumption or affectation,

but in humility and with courage, and singleness of purpose, strive form character and reputation as dentists.—*Cosmos*.

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DR. DARBY (*Dent. Times*), commends the placing of asbestos moistened with creosote, as a first application when capping exposed pulps. He says, "After preparing cavity, I apply chloroform to exposed part; put in asbestos, slightly moistened with creosote; then my *os artificial*, which I pack enough to allow it to harden before I expose it to the moisture of the mouth. I use enough of the paste to fill the cavity (when I fill with gold), and send patient home for a few days, and when he comes to my chair again, take out about two-thirds of this filling, and fill again with gold. But when I fill with amalgam, I wait two minutes to allow the *os-artificial* to 'set'." He further says, "in nine cases out of ten this plan is successful." Why do you use the *asbestos*, Dr.? Because it is a non-conductor?—*Dental Office and Laboratory*.

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IN the report of Prof. Gross' clinic, *Pacific Med. and Surg. Jour.*, are the notes of a case of excision of the entire inferior dental nerve for neuralgia. The patient, aged 22, suffered most excruciating pain, aggravated by talking, masticating, or swallowing. Every medical measure had been tried in vain. A long incision in the course of the inferior dental nerve was made, the flaps dissected from the bone, and the latter trephined in several places, exposing the nerve, which was removed. Entire relief from the pain ensued. Prof. Gross has performed this operation in a number of cases and always with decided relief.—*Dental Office and Laboratory*.

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DR. STERLING relates (*Am. Med. Jour.*) a case of a patient of his, who, being pregnant, was seized with severe tooth-ache, and rapid decay of her teeth. After all other remedies had failed, the idea was suggested to him that there was an absence of the bone and nerve forming elements, and he prescribed the hypo-sulphites of lime, soda, pottassæ and manganese in grain doses each, 3 times a day. He says relief followed immediately, pain ceased, and the teeth ceased to decay.

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CHROMIC ACID.—In the *Bulletin General de la Therapeutique*, Dr. E. Magitot recommends *chromic acid* as an application to various

affections of the buccal mucous membrane—such as all forms of stomatitis; and particularly the different kinds of gingivitis from that connected with dentition (as when, for example, it attends the eruption of a wisdom tooth,) to ulcerative stomatitis. Aphthæ, and divers other ulcerations of the buccal mucous membrane, are also, he says, rapidly modified by this agent. But, the affection for which he specially recommends the acid is “alveolo-dental osteo-periostitis.”

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CARBOLIC ACID AS A PRESERVATIVE.—Allusion was made in the last number of the *Journal* to the use of carbolic acid and glycerine as a substitute for alcohol in preserving animals and morbid anatomical specimens. The remark has led to many inquiries regarding the method of employing it for these purposes. A mixture of equal parts of good commercial glycerine and water, to every gallon of which is added one ounce of the crystals of carbolic acid, constitutes a good preserving liquid for all animal substances. The use of pure glycerine, with about one half-pint of alcohol, and half an ounce of carbolic acid added to each gallon, makes an excellent mixture for preserving the tissues of soft animals, where it is important to preserve the *color*, as well as the tissues. Glycerine is now afforded by manufacturers at very reasonable rates: we can furnish a most excellent condensed glycerine suitable for these purposes by the barrel, or in carboys, at fifty cents the pound. Since the decline in alcohol, in consequence of the modification of the excise duties, it is sold at a price which will enable naturalists and physicians to use it as a preserving agent without too severe tax upon their resources.—*Boston Journal of Chemistry*.

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#### ERGOT OF RYE IN NEURALGIA.

EDITORS MED. AND SURG. REPORTER:

*Case 1. Tic Douleureux.* Mrs. M., aged 28, was attacked Nov. 24, 1868, with tic of a very severe nature, on left side of face, extending down the neck. Catamenia had not made its appearance for two months. Ordered her to take infusi ergotæ, a tablespoonful every hour. The pain began to abate before the elapse of four hours, and at the end of eight, all pain had disappeared. Catamenia appeared at proper time, and since she has had no symptoms of neuralgia.

*Case 2. Tic.* Was called to see Mrs. H., half a mile in the

country. Found her suffering extensively from pain in the region of inferior dental nerve, extending down into shoulder and arm. Administered infusion of ergot in tablespoonful doses at intervals of an hour. Relief partial at end of four hours, complete at end of twelve.

*Case 3.* Mrs. D., age about 35 ; attacked Jan. 4th, 1869, with tic in left side of face, extending downward and upward into the temple. Administered ergot as in above cases, with similar results.

So far we have used ergot of rye in no case of neuralgia where it has not had the desired effect. It was suggested to us by an article in your excellent journal of Nov. 7th, 1868. We report these cases, thinking that such statements may induce others of the profession to more thoroughly test the remedy.

*Bowling Green, Ind.*

DUFFIELD & PICKENS,  
Physicians and Surgeons.

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### A SOLID STETHOSCOPE.

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BY HENRY N. AVERY, M. D., OF NEW YORK.

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The following simple stethoscope has been used by me for some time past, with the most happy results.

I selected a piece of hard wood twenty inches long, cut in the direction of the grain, and two inches in diameter. At a point six inches from one end I placed a band of iron. Then the long end was introduced into a steam chamber. When sufficiently steamed, it was divided in the centre down to the iron band. The two pieces thus separated at a point five inches from the band, were bent in the shape of an ordinary stethoscope. At a point four inches from the band, a second band was secured with a key, so that the ear-pieces can be contracted or expanded.

The advantages of this simple stethoscope are, that the sound is transmitted through the solid wood and continuous fibres more audibly than by any other means ; and, secondly, the cheapness at which it can be afforded.

The shape and size may be according to individual taste. Some kind of soft wood, for instance pine, if it can be bent, might answer a better purpose than hard wood.—*Philadelphia Medical and Surgical Reporter.*

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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RUBBER TUBING FOR INSTRUMENT HANDLE COVERS

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BY W. GEORGE BEERS, MONTREAL.

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We find fine rubber tubing, such as that used for regulating teeth, a very soft and comfortable covering for the handles of steel excavators, pluggers, and pivot and other files. It can be drawn over the instrument from the butt to the polished surface, and may be slipped down towards the point in cases where the instrument has to touch the lips or cheeks in working at cavities difficult of access. It prevents the instrument from slipping around in the fingers; absorbs moisture; saves the steel from rust; is easily cleaned; and entirely obviates the irritating effect on the fingers from the prolonged use of steel handles. In every respect it is comfortable to the operator, and in no case unpleasant to the patient. Rubber tubing may be utilized for many such purposes, such as a cover for pen handles. &c.

Another little convenience may not be unworthy of mention in these days of labor saving, and luxurious economizing, viz: a half glove or mit, to fit over the back and the palm of the hand, with fingers cut away a little below the knuckles. I find this very convenient and comfortable when extracting a large number of difficult teeth at one sitting, when the cross-cut backs of the forceps irritate the palm of the hand, and the fingers. It gives one a safer grip too, and prevents slipping in the hand. An old kid glove, nicely fitting, is as good as anything else for the purpose.

## SYPHILITIC AFFECTIONS WITHIN THE SCOPE OF DENTAL SURGERY.,

BY THOMAS NICHOL, M. D., M. C. P. S., PROFESSOR OF PHYSIOLOGY AND  
ETHNOLOGY IN ALBERT COLLEGE, HON. MEMBER OF THE ONTARIO  
DENTAL SOCIETY.

*Read before the Ontario Dental Society, at Belleville, July 21st, 1869.*

MR. PRESIDENT AND GENTLEMEN :—I noted last evening that a number of gentlemen spoke of “the profession” and “our profession,” evidently meaning those engaged in the practice of their specialty. To those phrases I decidedly take objection, there is no such thing as the “dental profession,” for you are surgeons practicing a specialty, and therefore you are legitimate members of the medical profession—said by Lord Bacon to be the most learned of all the faculties. Let me add that the dental art almost deserves to be styled a science, while the medical science hardly deserves to be called an art. I never send my patients to a “Dentist,” I always send them to a *Dental Surgeon*. Our President to-day spurned the idea of a “price for his work,” and—unconscionable fellow—wants “fees for his operations,” and I entirely agree with him. Away with the huckstering views which tend to degradation, and continue to advance the liberal ideas which tend to elevation and progress !

Compare for a moment the education of the dental surgeon with that of surgeons practicing other specialties. Say with the oculist, who is generally led like a stud-horse about the country, and who ekes out a questionable livelihood by peddling spectacles and glass eyes. Compare them with the aurists who are generally grossly ignorant of the very delicate and important organs on which they practice, and who do far more harm than good. *Don't* compare them with the venereal surgeon who gets his morals as well as his practice from his female patients.

There can be no doubt but that syphilitic affections frequently come under the notice of the dental surgeon, and, though this class of diseases may be familiar to most now present, it may be useful to review them.

Syphilis may be defined to be an infectious disease characterized by the presence of a virus which transmits it from one person to another, by a period of incubation during which the poison is latent giving no external sign of its presence in the system, and by a certain degree

of order in the evolution of its manifestations, to this may be added that one attack *generally* confers immunity against a second.

There was a time, quite within the memory of all now present, when the doctrine of the unity of the syphilitic virus was tenaciously held by the vast majority of our profession; but during the last decade a rapid change has been coming over the minds of observing surgeons, and what we used to call 'soft chancre,' 'simple chancre,' and 'non-infecting chancre,' is now denominated *chancroid*, while the initial lesion of true syphilis retains the old name of *chancre*.

The differential diagnosis of the two affections is as follows: True syphilis has a period of incubation averaging about twenty-seven days; while pseudo-syphilis has no appreciable period of incubation. In true syphilis there is usually a single lesion, while in pseudo-syphilis the lesions are very generally multiple. In true syphilis the lesion is not re-inoculable on the subject of it, while in pseudo-syphilis the lesions are almost indefinitely re-inoculable on the person affected. True syphilis is always derived from a chancre or other syphilitic lesion, while pseudo-syphilis is always derived from a chancroid or virulent bubo. The primary lesion of true syphilis is a papule of greater or lesser size, which erodes and forms a superficial ulcer, not usually involving the whole thickness of the skin or mucous membrane; while pseudo-syphilis shows itself in the form of a vesical-pustule which terminates in an excavated ulcer, perforating the whole thickness of the skin or mucous membrane. The true chancre has edges which are *hard*, sloping and closely adherent to subjacent tissues; while the false chancre has soft edges which appear to be cut with a punch, and which are not adherent to the tissues beneath. In true chancre the induration is firm and cartilaginous, sometimes resembling parchment, and this induration remains for a long time; while in false chancre there is no specific induration, though a slight hardening may result from inflammation or the application of caustic, in which case the induration shades off into the surrounding tissues and is quite evanescent. In true syphilis the serous secretion is very scanty, and there is no suppuration unless it be during the period of cicatrization, the secretion is not auto-inoculable; in pseudo-syphilis there is an abundant purulent secretion which is auto-inoculable. In true syphilis one attack gives partial protection against a second, in many cases this protection is complete; while pseudo syphilis may affect the same individual an almost indefinite number of times. The true chancre is rarely phag-

edemic, and is usually limited; while the false chancre is prone to take on phagedenic action, and is usually disposed to spread. The true chancre is less indolent than the false, which is proverbially slow to heal. True syphilis is almost always accompanied by enlargement of the superficial inguinal ganglia of one or both sides, and these enlarged glands are indurated, distinct, moveable and painless, and, moreover, they rarely suppurate, and when they do suppurate the pus is never re-inoculable; while the pseudo-syphilis is accompanied in some cases only by an adenitis which generally suppurates and furnishes inoculable pus which produces a chancroid, *never a chancre*. True syphilis is a constitutional disease, and unless retarded or prevented by specific treatment, secondary symptoms appear in from six to twelve weeks after the appearance of the sore; while pseudo-syphilis is always a local affection and cannot poison the system.

Having thus briefly reviewed the two diseases, I will now proceed to discuss the forms of them which come under the notice of the dental surgeon. In the first place then, he rarely sees a chancroid, the characteristic lesion of false syphilis, for the very good reason that it is mostly seated in the neighbourhood of the genitals and rarely appears in the face. Out of 150 cases of venereal ulcers upon the head and face all, with the exception of 5, were true chancres. Four of these exceptional cases were so imperfectly reported as to be valueless; and Ricord admits that the fifth case, observed by himself, an ulceration at the base of one of the superior incisors, is unreliable. It is, however, a remarkable fact that the chancroid may be developed upon the head and face by artificial inoculation.

In a report of 471 true chancres observed in men, Dr. Fournier found that 445 were situated on the genitals, leaving 26 to be distributed over the rest of the body. Of these 26 extra-genital chancres, 12 were situated on the lips, so that after the genital organs the lips and the mouth are the most frequent seat of the primary lesion. The peculiar induration of the true chancre always presents the same anatomical composition. Chas. Robin considers that this induration resembles the development of a fibro-plastic tissue in the thickness of the dermis; while Virchow believes it to be of a nature entirely similar to that of the gummy tumours so characteristic of an advanced period of syphilis. Prof. Baerensprung considers that the specific induration of chancre differs from the exudation of ordinary inflammation, and that it is identical with the effusions which take

place under the influence of constitutional syphilis in the various internal organs.

The *dry papule* is the rarest form which syphilis assumes on its first appearance, and, so far as I can ascertain, has very rarely been seen on the lips or mouth. It presents the appearance of a small papular patch of a brownish red colour, firm and elastic, and sometimes covered with whitish scales.

The *chancreous erosion* has frequently been noted on the lips. It is the most frequent form of primary syphilis, having been observed by Bassereau 146 times in 170 cases. It usually commences as a copper-red spot, little raised, papular and dry, which becomes covered with a crust, and finally becomes eroded or slightly ulcerated on the surface. This ulceration, which is round or irregular in shape, presents a rose-coloured surface on a level with the surrounding parts. It discharges a small quantity of serous fluid, and the base is indurated rather than deeply. Dr. Lancereaux says that its variable extent is sometimes so slight, the discharge so little abundant, and cicatrization so rapid that in the absence of the characteristic induration, it is prudent to refrain from giving a positive opinion as to its nature until the appearance of secondary symptoms. According to Bassereau, the duration of this lesion does not usually exceed two months. It terminates by the resolution of the indurated point, and cicatrization of its surface.

The *indurated chancre* is the third variety of the primary disease. Formerly it was believed that ulceration was the first symptom and that induration supervened afterwards, but the more correct view, first promulgated by Dr. Babington the commentator of Hunter is, that the character of primary venereal infection is essentially an induration which afterwards passes into ulceration. Its first aspect is that of an elevation or papule which has the size and feel of a *split-pea*, and which, we know, is the result of a neoplasm in the cellular tissue. This papule is of a reddish or dirty yellow colour, rounded and hard to the touch, and covered with greyish scales, under which a cup-shaped ulcer is rapidly developed. After an average duration of six weeks, the hard chancre enters upon its last phase, its edges collapse, its floor becomes eliminated or absorbed, granulations form, and cicatrization takes place from the circumference towards the centre. Chancres are no where more indurated than on the lips, and they are often so bulky as greatly to disfigure the face. They are usually superficial, and are rarely deeply exca-

vated unless they have been irritated. When they appear on the labial commissure they are divided into two portions, separated by a deep ulcerated fissure. These chancres have also been observed on the gums, palate, tonsils, inner surface of the cheeks, and on the tongue, in which latter position they are small and more deeply excavated than those of the lips. Paul Diday believes that the chancrous erosion is due to inoculation from a secondary lesion, and that the indurated chancre is produced from a primary lesion. The ganglia connected with the seat of the sore become indurated; these ganglia are those of the anterior and posterior sub-maxillary groups.

Primary syphilis then is not very frequent on the dental surgeon's domain, but it is otherwise with the secondary affections, so much so that Dr. Rollet states that the mouth is the great laboratory of secondary syphilis. Of the secondary affections of the skin, the only one you are apt to see is syphilitic impetigo, which often affects the commissures of the lips, where it presents a very singular appearance not seen in any non-specific eruption. The pustules are flat and of various sizes, their base of a copper-red colour, sometimes elevated, sometimes sunk in a prominent border of the same hue, while the small spots on their surface are of a greyish or greenish yellow. On the lips the pustules are sunk in a deep border of ulcerated integument, while their summits are covered with the characteristic scabs; they arrange themselves in circles or semi-circles, surrounded by the well known copper coloured glory which even laymen know to be pathognomonic. On examining the mouth, it will be noted that the syphilitic impetigo is very generally connected with mucous patches.

Mucous patches are peculiar to syphilis. They consist of elevations of a rose colour, rounded in form, the surface closely resembling mucous membrane, and they are situated near the outlets of mucous canals, especially upon the mouth and its mucous membrane. Counsel has been darkened by the multiplicity of names given to it. It has been called 'moist pustular syphilide,' 'flat pustule,' 'flat tubercles,' and 'moist papule,' but, on the whole, 'mucous patch' is the best name. Bassereau states that in 130 men affected with mucous patches, 100 were on the tonsils, 55 times on the lips, 27 times on the velum palate, 18 times on the tongue, 17 times on the pillars of the soft palate, and 11 times on the internal surface of the cheeks. In 186 women affected with mucous patches, Davasse and Deville found them in the face only five times, so that it is one of the inscrutable facts of syphilis that in men mucous patches are most

frequent in the face, and in women least frequent in that region. So far as my experience extends, I should say that it is one of the most common manifestations of syphilis in the male sex. Their form is that of a flattened circular or oval papule of a rose or violet hue. Their borders are quite distinctly marked and they never have the copper-coloured glory. Their surface is sometimes dry, but more generally moist from the secretion of a dirty fetid fluid of an irritating nature. Their consistence is soft, closely resembling that of mucous membrane. Their development takes place spontaneously, though Davasse and Deville maintain that they may arise from the transformation of a chancreous ulcer. They first appear as a red spot, which is a true congestion of the skin or mucous membrane. The epidermis is gradually raised by a small quantity of serous fluid, soon the skin breaks and reveals a bright red surface covered with a moist whitish pellicle. In the mouth they are mostly of a deep violet colour; when the epithelium is destroyed, it is replaced by a yellowish false membrane, further on the patches are ulcerated and present an uneven surface dotted with fine and abundant granulations. The red colour, soft consistence, and moist surface covered with a whitish pellicle render the diagnosis of the mucous patch comparatively easy. As to prognosis, it is one of the most benignant manifestations of constitutional syphilis; indeed, according to Bassereau, its existence is almost a guarantee against the more severe ulterior syphilitic manifestations.

Syphilitic affections of the periosteum and bones are among the latest manifestations of syphilis, and may be regarded as types of the tertiary form. They are very common, and have been observed as far back as the sixteenth century. Many observations have been made, and yet these affections are too little known, so that a more profound inquiry is urgently wanted. The syphilitic affections of the osseous system assume three forms, 1. the inflammatory; 2. the gummy; 3. that of dry caries which appears to be a true atrophy of the bone. 1. The inflammatory form affects both bone and periosteum. A neoplasm is deposited in the substance of the bone or on a level with the periosteum which forms a protuberance more or less circumscribed. These protuberances are sometimes from the first as hard as callus, they are sometimes absorbed, and sometimes definitely organized. In the latter case, calcareous elements are deposited in the neoplasm, then a bony product which has received the name of exostosis or periostosis. The peculiar characteristics of osteo-perios-

titis is an indistinct fulness, puffy at the circumference ; this is painful on pressure, and when superficial, there is redness and heat of the skin. 2. Gummy tumours of the bony tissues are not very rare, being found both in the periosteum and in the bone itself. They present themselves in the form of small rounded tumours, little painful, of a firm or somewhat soft consistence. This substance, which is analagous to a solution of gum, is of a whitish or yellowish colour, and generally ends in softening. Soon they inflame and ulcerate the neighbouring tissues, and sometimes end by eating their way to the exterior, forming fistulous canals. 3. The dry caries, or inflammatory atrophy is characterized at first by bone pains and a slight prominence beneath the periosteum, but later it presents a gradually enlarging depression. This thinning always commences by the dilatation of the vascular canals of the bones, and everything leads to the belief that this particular lesion succeeds to a gummy infiltration of which it is only the last stage.

The symptoms connected with lesions of the trifacial nerve vary with the branch affected. There are various sensations, pains more less violent, and sometimes anæsthesia. A female patient of Lallemands, after transient syphilitic hemiplegia, had formication and numbness of the whole of the right side of the face, as if a cobweb had been applied to the skin. A similar sensation existed in the right half of the tongue. A case related by Herard makes mention of a numbness of the right side of the nose, and of the neighbouring parts of the cheek and upper lip. The pain, which is perhaps the most constant phenomenon, generally occupies one of the lateral halves of the head. It sometimes changes to the other side, or it shows itself on both sides of the head at the same time. Some authors, as Frank and Meckel speak of syphilitic odontalgia, and the affection is quite a common manifestation of the disease. All these affections present nocturnal paroxysms, and in all of them it is necessary to know the antecedents of the patient.

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## DENTAL INSTRUMENTS.

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BY X. Y. Z.

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Benjamin Franklin made a great many wise remarks in his day, but also some that were unwise ; and perhaps none of the latter were more illogical than his aphorism, that "a man should be able to do,

with a saw, that which was intended should be done with an augur." Applying this remark to the celebrated philosopher's own life, and to every branch of science and art, we see its palpable error; and it may serve as a fit text, for us herein, to say a word or two on the subject of dental instruments.

Our manual dexterity, with our various appliances, is so much oftener called into service than our simple advice, that there is no profession which has made greater advances in the improvement of its instruments and appliances, than that of dentistry. In ordinary medical life, as it is on this continent, where surgery is not as much a specialty of certain practitioners as it is in Europe, ten out of twelve physicians have a greater proportion of strictly medicinal and therapeutical cases in their every day practice, than of surgical operations; and the improvement in surgical appliances bears no comparison to the ever increasing stock for the *dental* surgery and laboratory. Without instruments the occupation of the dentist is gone.

Doubtless the misery of poor instruments has often come home to many a conscientious dentist, who has endeavoured to make fine fillings with badly adapted pluggers; whose stock of excavators has been limited to the old orthodox straights, and rights and lefts; whose key of Garangeot—dread fracturer of alveoli and maxillary—was the most frequent appliance for extracting. The improvements in the various dental instruments within the memory of comparatively young practitioners, is perhaps the best testimony to the live spirit of progress in our profession, and the enterprise of the manufacturers. The rough paths over which our predecessors travelled have been smoothened for the present generation of dentists, and by means of better instruments, labor has been relieved of much of its severity, and the average class of operations have been much facilitated. A look over S. S. White's catalogue—and still better treat, a walk through his depot—will convince the most sceptical that dentistry is a real *live* profession; and that the ways and means of working are much improved by the co-operation of the manufacturer with the operator.

It stands to reason, that though some few men may use an augur where they should have a saw, the very large majority of us are too mediocre or too impatient to climb hills, when we can get all we want in the valley. Why use old and tedious methods, when new ones are much superior in every respect? Where is the sense in sticking to an old instrument and an old principle in the present advancing

state of our profession? We were much struck with the magnificent display in Dr. White's, and the other depots, and would urge our Canadian confreres to invest in the new pluggers, excavators, &c., now in the market. The investment will pay in pleasure to operator and patient, the satisfaction of using a good article, and better opportunity to do superior work. If we want to excel, we must have good instruments, Dr. Franklin to the contrary, notwithstanding.

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## PROCEEDINGS OF SOCIETIES.

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### THE AMERICAN DENTAL ASSOCIATION.

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BY W. C. HORNE, D. D. S., NEW YORK.

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The report of the Executive Committre was then presented and adopted.

The report of the Committee on Amendments to the Constitution was taken from the table, and the report was adopted without even a reading of it.

Dr. Truman's resolution on the right of female dentists to membership was indefinitely postponed, because the Association had no right to make recommendations to local societies.

Dr. Buckingham gave notice of an amendment to the Constitution, to be acted upon next year, providing that no person who holds a dental patent, or is pecuniarily interested therein, shall be a member of the Association.

Dr. W. H. Shadoan offered a resolution donating the amount of back dues, from 1865 to 1869, to thirty-three members, who were reported by him to be in arrears, each to the amount of \$23. The resolution passed after an animated debate.

The Committee on Ethics reported, through Dr. Shepard, that they had had brought before them charges against Dr. J. A. McClelland, of Louisville, for violating Article II., Section 3, of the Code of Ethics, by placarding large advertisements on the street cars of Louisville, and by unprofessional advertisements in the papers, which were read; they therefore offered the following resolution: "That J. A. McClelland, of Louisville, be expelled from this Association."

They also reported that they found upon the records of the Association charges against Dr. C. P. Fitch, of New York, for violation of the same clause of the Code of Ethics; but they did not feel

authorized to recommend action on his case, as no definite charges or proofs had been offered.

Dr. Atkinson called to mind the remark of Dr. McQuillen at the time of the adoption of the Code of Ethics, that it was unnecessary for gentlemen, and useless for those who were not such. He did not like the idea of singling out one or two as examples and leaving all the others to go free. It was well known that Dr. Watt, who had so persistently urged the adoption of this code, had gone home and signally violated its provisions, and yet no one had lifted up a voice against him. He thought the adoption of laws of this nature peculiarly unfortunate; because they would be brought to bear unequally; while one would be made to suffer the utmost penalty, others would be allowed to go free.

Dr. Fitch asked to be heard in explanation. He said that many loose and unfounded charges were floating about against him. The sum of his offence, he said, was this: that he had advertised the public of New York in good faith that he was ready to operate at reduced prices on certain days and hours; because there was a large class of most worthy people in that city who were desirous to preserve their teeth, and could not afford to pay the current rates of first-class operators. He had done nothing to lower the standard of professional skill, but only made use of the circumstances of the case to minister to his necessities. He yielded to no man in his love for the profession, and his desire for its advancement. He had meant to do no wrong in any course he had pursued, and, whatever the action of the Association, should endeavor to maintain the character of his professional operations, and devote his efforts to the relief of humanity within the range of his practice.

On a motion being made to refer Dr. McClelland's case to the Committee on Ethics for the ensuing year—

Dr. McQuillen opposed very strongly the postponement, and was in favor of proceeding at once with the trial of this case, which was a most flagrant one. As already stated, he had objected to the adoption of a code of ethics; but since it had become part of the organic law of the Association, he demanded its enforcement. While it was mortifying to know that the Code had been violated by one who had prepared it, and was most zealous in forcing it upon the organization, yet it was not an unusual thing in the history of morals for men to make laws and then to be the first to break them. It was much better to make few if any professions, and rather exceed than fall

short of such as are made. We could, however, only deal with cases in which specific and thoroughly substantiated charges had been brought before the Association; two such were under consideration. One of these, Dr. Fitch, had abandoned the objectionable practice, and offered an explanation with the desire of making some reparation; but in the other instance the accused was openly, and in the most objectionable manner possible, pursuing his unprofessional course. The rules of the Association had been so often suspended that there could be no possible objection to doing so then, and proceeding with the trial. The person charged with the offence was present, and no injustice would be done to him, as the members would listen patiently to what he might say in defence of his course before taking action upon it. If there was one class of men in particular for whom he entertained the most profound feeling of pity (he would not say contempt, for one should endeavor to unlearn that) it was those who were so lost to all sense of propriety and decency that they could stoop to the low tricks of charlatans, and thus engage in practices which cast a stigma upon themselves and the profession they dishonor. If such as these were to be present as meet companions, it would soon make not only the Association but the profession a by-word and a reproach. What they could want in the organization was difficult to conceive, for they were not with it in spirit, and should not be of it in person. Laws promptly and justly enforced in such a case would exercise a beneficial influence upon the *morale* of the profession.

Dr. Horne stated that the clause under which Dr. McClelland was indicted required that the charges should be investigated and reported upon at the next annual meeting after that at which they were made. The Association had adopted the report of a committee which proposed to substitute a new Constitution without a word of debate. If the old Constitution were in force, Dr. McClelland had the right to a copy of all the charges and specifications, and a year to answer in; if the new one were in force, there was no provision by which he could be brought to trial.

The portion of the report in regard to Dr. Fitch was then adopted; that relating to Dr. McClelland was referred to the Committee on Ethics for the ensuing year. Drs. W. H. Morgan, C. R. Butler, and L. D. Shepard were appointed as that committee.

A resolution of Dr. Bogue's, expressing regrets at the existence of misapprehensions as to certain members (unnamed), and for the injus-

tice of an *ex post facto* interpretation of laws, was laid on the table ; and another, by the same, calling for a vote of censure on Dr. Atkinson, for disregarding the rules of order, was replied to by Dr. Atkinson in a characteristic manner. The resolution was ordered to be expunged.

The Publication Committee was instructed to print the Constitution with the Transactions.

Dr. Homer Judd was then inducted as President, and Dr. Taft read an address, after which the Association adjourned to the first Tuesday of August, 1870.

#### DR. TAFT'S ADDRESS

Dr. Taft said that his inclinations would lead him to retire in silence, but that custom seemed to require an address on the occasion of retiring from so honorable a position. He tendered his congratulations on the present condition of the profession, which was in advance of anything before attained, while the future promised continued progress. The labor and efficiency which had insured this advancement had also won for the profession public interest and esteem. The responsibility of enlarged privileges and advantages is measured by ability, whether inherent or attained by slow growth and effort. We are too apt to forget that each one has a work that no other can do. Each has his individual responsibility to himself, to society, to his profession, and to God. He who is faithless to himself will not be faithful to others, for no man loves others better than himself, as a rule. Every man should endeavor to fill the ideal of the Author of his being, cultivating his talents to the highest degree. There are various incentives to this. In every man there is a tribunal that holds him to a strict account. His own comfort and welfare require that he should neither be barren nor unfruitful. His duty to others demands such self-cultivation. We are so inseparably linked together by many and strong ties which we cannot break, that if we fail to be attuned according to the infinite design, discord is the result. No man can with justice to himself afford to base his professional character and reputation upon aught but an immutable foundation. Let it be fixed upon the rock of truth, and not upon the sands of error. We all require for our growth and nourishment the best food we can get. Why then rest satisfied with the husks, and too often with offal? Let us seek and eat the pure bread of life, that we may grow to the stature of perfect men. We

are under great obligations and responsibilities to our fellow-men, to society ; and it is impossible to dispose of those obligations otherwise than by a faithful fulfillment of them. The duties that devolve upon us to the profession that we have espoused—taken for better or worse—are, that we should carefully look to its interests, and labor industriously for their promotion. He has no sympathy or patience with the professional brother who, reposing in his quiet selfishness, or reclining upon his dignity, refuses to take part in the great labor of the day. The man who does not feel and yield to the great impulses of the age, who is not fired with their spirit, belongs to by-gone days ; by some mishap his coming has been delayed a few generations. Let us lay aside all antagonisms except against error and ignorance ; we have not time nor strength for fruitless contests, for precedence and self-aggrandizement ; we should make harmonious efforts to promote the good and advance the cause of profession. It would be pleasant to take a retrospect of the past ; but it is not expedient for him who runs a race to look back before the goal is won.

His earnest desire was, and should be, that our profession, which this Association so fully represents, may take its position as one of the battalions in the great army of progress, and keep abreast with the foremost in the march, who tramp, tramp, tramp to the music of the age in the glorious consumation of the redemption of humanity from the dominion of disease and death.

(To be continued.)

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#### BOARD OF EXAMINERS OF THE DENTAL ASSOCIATION OF THE PROVINCE OF QUEBEC.

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The adjourned meeting of the above corporation was held on the 21st of September, in accordance with the Act of Incorporation. The meeting took place at Dr. Bernard's office.

Present, A. Bernard, P. Baillargeon, C. F. F. Trestler, J. H. Webster, C. Brewster, J. A. Bazin, J. McKee, H. Ross, M. Pourtier, W. G. Beers.

The minutes of former meeting were read and confirmed.

The certificate or license, on parchment, and the seal were presented by the committee appointed at last meeting, and after examination were duly approved of. The Board also sanctioned the action

of the Secretary in obtaining various books &c., and ordered payment to be made for all indebtedness.

An application from T. A. Venner, of Quebec, for a license without examination was granted, he having practiced over two years in this Province. Various letters were read and placed on file.

The elective officers of the Board were authorized to make any verbal and other alterations in the Act of Incorporation, not prejudicing its fundamental principles, and apply for amendment.

The Treasurer's report was read.

Mr. Beers gave the following notice of motion to be brought up at next meeting :

"*Resolved*, That the license of this Board be not granted to any applicant exhibiting show-cases and other such unprofessional means of attracting attention, or making use of quack advertisements, and that any licentiate infringing this rule shall on proof have his license cancelled."

The applications of Messrs. Duclos and Valois for examination were submitted and received. Mr. Duclos was first brought before the Board, and passed a very creditable examination. Mr. Valois also received his parchment. The candidates were examined on the following subjects :—A. Bernard, Institutes of Dentistry ; P. Bailargeon, Dental Physiology ; C. F. F. Trestler, Dental Anatomy ; J. H. Webster, Mechanical Dentistry ; C. Brewster, Dental Chemistry ; J. A. Bazin, Filling Teeth.

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#### DENTAL ASSOCIATION OF THE PROVINCE OF QUEBEC.

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The annual meeting of the above society was held on the 21st of September, at 8 o'clock p.m., at Dr. Bernard's office.

Dr. Bernard, President, in the chair.

The following members were present : Messrs. Bernard, Trestler, Baillargeon, McKee, Ross, Webster, Nichols, Brewster, Bazin, Pournier, Davis, Globensky, Valois, Duclos, Beers.

Mr. Hutchinson, of the *Daily News*, was also present by invitation.

The minutes of former meeting were read and confirmed.

The Treasurer's report was read and adopted.

Dr. Wm. Patton, of Quebec, was proposed for active membership, to be balloted for at the next meeting.

The election of officers then being in order, the following was the

result :—President, A. Bernard, Montreal ; 1st Vice-President, P. Baillargeon, Quebec ; 2nd Vice-President, J. McKee, Quebec ; Secretary, W. G. Beers ; Treasurer, J. A. Bazin ; Librarian, H. Ross, Quebec ; Executive Committee, C. F. F. Trestler, C. Brewster, E. Lefavre, J. Dowlin, N. Fiske, J. H. Webster, L. J. Leblanc.

A motion to abolish the use of show cases after the 30th of March, 1870, was then passed unanimously, after a lively and somewhat amusing discussion.

Dr. Trestler said that he had several quacks in his vicinity who used show-cases, and he would like to have a law imposed to abolish them, by the Board of Trustees and Examiners.

Dr. Ross was opposed to show-cases inasmuch as they were no criterion of a man's ability as an operator, or a mechanical dentist.

Dr. Bazin said that a number used them, no doubt, in 'self defence,' and would gladly abolish them if their abolishment was made general. He would be rejoiced to see the last show-case taken in.

Dr. Patton referred to other disgraceful means of attracting attention, such as spread-eagles, golden teeth, quack advertisements, &c.

Dr. Beers thought that the profession should be divested of every semblance of quackery, particularly show-cases and loud advertisements ; and that if dentistry was ever to be elevated in Canada, the first steps must be taken by the members of the Dental Association.

Dr. McKee was opposed to all means of attracting the ignorant and unwary into our offices.

Dr. Bernard was glad to hear the discussion and trusted that the members would in their own practices, and with those not meeting with us, endeavour to establish a sentiment above such miserable efforts to get business. No dentist of real ability or integrity exhibits show-cases, and he thought that the profession should at once take a stand against them.

The next meeting of the Association will be held in Montreal, in November, due notice of which will be given to the members. It was decided to hold the January meeting in Quebec, and the following programme for that occasion was drawn up :

Essay on "Irregularities," by H. Ross.

Essay on "Hygiene," by M. Pourtier.

Discussions on filling teeth, extracting, and deciduous teeth.

W. G. Beers was appointed to deliver the annual address at the next annual meeting.

On motion of J. McKee, seconded by H. Ross, Dr. W. H. Atkinson, of New York, and Dr. W. H. Waite, of Liverpool, England, were unanimously elected corresponding members.

W. GEO. BEERS, Secretary.

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## SEVENTH AND EIGHTH DISTRICTS DENTAL ASSOCIATION.

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REPORTED BY C. S. CHITTENDEN.

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The Western New York Dental Association was at its last meeting adjourned *sine die*, and it was voted that the Seventh and Eighth District Societies being legal corporate bodies, and covering about the same territory, should hold their semi-annual meeting together, alternately in each district.

The first union meeting of the two societies was held in Medical Hall, Young Men's Association Building, Buffalo, N.Y., commencing Tuesday, October 5th, 1869.

The Association was called to order by the President of the Eighth District Society, Dr. Whitney.

Dr. Barrett read the minutes of the last meeting of the Western New York Dental Association, at Rochester.

Dr. Whitney read a short address, giving the reasons for the disbanding of the old Association, and for the union of the two District Societies.

Dr. Barrett moved the reference of the address to a committee of four—two from each district—and that the committee be instructed to draw up a plan of organization and association.

The Chairman appointed Drs. Gifford and Bristol from the Eighth, and Drs. Walter and Requa from the Seventh District.

Committee on Rose Pearl, were, on motion, given further time to prepare their report, as were the Committee on Mechanical Dentistry.

Dr. Barrett moved that Drs. Southwick, Freeman, Miller, and French be appointed a Committee on Clinics.

The Chairman appointed Drs. Barrett, Miller, and Lewis a Committee of Publication.

Dr. Hodge, of Binghamton, was introduced, and on motion was elected an honorary member. Adjourned till 2 p.m.

## AFTERNOON SESSION.

The Committee on Organization made their report, which was adopted after being slightly amended.

Dr. R. G. Snow, from the Historical Society, asked the members to send him a sketch of their professional careers together with their photographs, to be placed in the book prepared for that purpose.

The first subject for discussion was "The proper preparation of Gold for Dental Purposes."

Dr. Barrett said that heat or caloric was the very opposite of cohesion, it destroys it. One reason for annealing gold is that it partially destroys cohesion and drives the particles of gold farther apart, permitting a more intimate interlacing of its particles. It also so alters the molecular arrangement or polarity of its particles as to permit a closer approximation of them to each other. But contrary to the general rule that annealing makes metals softer and more pliable, it sometimes makes gold harder, harsher, and more impracticable. This is owing to too much handling and overheating. We know that continued hammering will change the molecular arrangement of particles of iron in a mass, as for instance car wheels. It makes them hard and brittle. Gold in sheets is much more susceptible to this, so handling affects it. Then too, two or more thicknesses in the roll stick together making a lump. In practice, uses soft foil, and anneals it on an annealing tray, and uses it in the form of pellets. Heats it above the temperature of the breath, to avoid condensation of moisture on the surface.

Dr. R. G. Snow said that the manner of filling teeth has entirely changed since he commenced the practice of dentistry. The old forms of gold—cylinders and tape—are done away with, and adhesive gold has taken their places. He thought the welding property of gold lies in its cohesive attraction. If a bullet is divided in the centre and the surfaces made perfectly smooth, they will, when placed in apposition, stick quite firmly together.

Dr. Barrett thought that the two pieces of the bullet would be held together, at least partially by atmospheric pressure.

Dr. Beattie said he was in the habit of heating his gold to a red heat, but could see no particular difference in its working, whether annealed to a white heat or only warmed sufficiently to drive off the moisture from its surface.

Dr. Oliver thought that in rolling gold into sheets the particles

arrange themselves on a line with the force applied. Gold plate is easily broken when force is applied with the grain, and with difficulty when applied against it.

Dr. Southwick uses Nos. 2 and 3 foil, and anneals not quite to a red heat, and uses from an annealing pan. Uses the mallet in preference to hand pressure, as being more easy to himself, and a saving of the nervous exhaustion which is so destructive to the health of the dentist.

The next subject, "Continuous Gum," was taken up for discussion.

Dr. Bristol has had a good deal of experience in continuous gum work, and has done as much poor work as almost any one, and feels entirely sick of the discussion. There is no kind of work equal to it when it can be well done. Every piece, in his hands, has been porous, no matter how carefully he manipulated it, nearly every piece shrinks. Again they are too easily broken by being dropped. Poor as he is, he would give fifty dollars for a formula by which a piece can be made that will not shrink. He had hoped that with aluminum something good might be made. He had thought, and still thinks something valuable might be made of Rose Pearl. He has never been perfectly satisfied with a single set of teeth made of continuous gum since he first commenced its manufacture. It takes so long to make a perfect set of teeth with it that he has abandoned its use altogether. He has made many sets which seemed to be perfect when completed, and which gave good promise for a few months, but after a year or two they had fallen to pieces.

Dr. Giffard said he had had some experience in continuous gum work, but has not experimented much, he had used the formulas of others. As far as his experience has gone, it has proved as durable as any kind of work except, perhaps, gold work. Thinks it more durable than rubber, he has several sets which have been worn for eight or ten years. He doubts whether dentists living in the country can succeed well with it. It requires to be very carefully baked, and unless a person is constantly engaged in its manufacture he will be liable to failure, it requires a skilful and practiced eye to tell when the baking has reached the proper stages. Thinks that continuous gum work can be made to be as strong as any other, and is, when perfect the most beautiful of all. In removing the pieces from the muffle, great care must be taken to prevent the gum from checking from too sudden cooling. There is some difficulty about repairing it, and he thinks it is advisable to send broken sets to some one who

is constantly engaged in that style of work to be done. He would now send all manufacturing and repairing to a regular laboratory to be done.

Dr. Whitney said that between 1851 and 1856 he had done a large amount of continuous gum work, but could not now tell how much of it is in use. At first he had used Hunter's gum, but found it almost invariably porous and easily broken. Afterwards he used Allen's formula with much better success. Teeth made after Hunter's formula shrank badly, much more than those made after Allen's.

Dr. Bristol said that in 1839 we had a gum which shrank but little. He had used many formulas, but they all shrank more or less leaving the gum full of checks, and these checks would be found, when examined under a microscope, to extend clear through the gum. Teeth can be made to look beautifully out of the mouth, but they are not fit to be used. Continuous gum work must be made by artificial light as the eye cannot distinguish the colors properly by daylight.

Dr. Oliver has used the continuous gum for a considerable length of time, but thinks that for a useful artificial denture it is now obsolete. There are so many contingencies that cannot be fully under the control of the dentist, that he does not consider it worth a rush for popular dentistry.

Dr. Daboll said that he had had about a year's experience in continuous gum work while with Dr. Bristol, of Dansville, when he found that many cases seemed to be as near perfection as possible, and answered the purposes of mastication and enunciation thoroughly, while others, which at first appeared to be as well made as the others, only lasted for a short time.

Dr. Bristol said that he could never get two parcels of gum materials alike, there would be a very great difference in the quality, and he would advise every dentist using continuous gum, that if he ever succeeded in getting materials that answered the purpose well, to purchase all that he could obtain. He contended that the secretions of the mouth acted upon the materials of which sets of teeth are made.

Dr. Danforth thinks that one great cause of the breaking of sets of teeth made of continuous gum work arises from its inelasticity, as when there are changes in the alveolus from absorption the plate will bear most heavily in mastication on the roof of the mouth, and some persons seemed to try to see if they cannot break their plates by biting from side to side. Adjourned.

Wednesday morning. According to announcement made yesterday, most instructive clinical lectures were given by Drs. Southwick and Daboll, in their respective offices, at eight o'clock, at which most of the members were present. These clinical lectures have become one of *the* features of the meetings of the Western N. Y. dentists, and cannot fail to elevate the character of the operations of all who attend them.

At ten o'clock the Association was called to order by the President, and after reading of the minutes the discussions were resumed.

"Anæsthesia, its effects upon the blood," Dr. Whitney, essayist. Dr. Whitney being unable from a severe cold to speak for any length of time, his essay was read by Dr. George B. Snow, after which the discussions proceeded as follows, viz :

Dr. Barrett said he would like to say a few words on the subject of the administration of anæsthetics. We find that ladies are more subject to odontalgia during the catamenial flow than at any other period, and he would object to administer any anæsthetic at such time. He would never willingly give it to a lady when there is any obstruction to the regular flow of the blood, if he were aware of it.

Dr. Squires wished to know whether any one had ever seen any serious results follow the administration of an anæsthetic during catamenia?

Dr. Danforth has given ether for twenty years, and seldom gives any other anæsthetic, has a way of giving it peculiar to himself. He takes a common glass tumbler and heats quite hot, and then places it into a sort of funnel made of paper, so prepared that it can be placed over the mouth of the patient, he then puts a piece of sponge into the tumbler and pours enough ether on to it to thoroughly saturate it, and then places the funnel over the mouth and directs the patient to inhale through his mouth and exhale through his nose. At one time he was careful to make inquiries with regard to the catamenia, but latterly, pays no attention to it.

Dr. Walter always refuses to give any anæsthetic during the menses.

Dr. Leach has employed nearly all the anæsthetic agents now in use, but prefers chloroform, particularly on himself. Has taken it himself till the sense of feeling was entirely gone, and still remained sufficiently conscious to extract one of his own teeth. Thinks that it should be given slowly to ensure safety.

Dr. Requa is of the opinion that the best effects are produced by

giving the anæsthetic rapidly, particularly is this the case with the nitrous oxide.

Dr. Barrett agrees with Dr. Requa in regard to giving the nitrous oxide. Has had some trouble with chloroform. In one case the patient, after coming out from the influence of the chloroform, was taken with what appeared to be fainting fits, and he was obliged to keep him moving about for more than half an hour before he entirely recovered himself.

Dr. Daboll said he had noticed that with persons who had been or were suffering from chronic disease of any kind, the symptoms appeared to be aggravated by the administration of nitrous oxide, and thinks that some of the fatal cases have arisen from a fainting of the person from the excitement consequent of the extraction of the teeth.

Dr. Requa asked if the sinking sensation might not arise from the loss of animal heat.

Dr. Rathbun said he was of the opinion that the giving of an anæsthetic on a full stomach was frequently the cause of the sinking sensation of which mention has been made. He is particularly careful not to give any anæsthetic during the catamenia.

Dr. Giffard thinks the mind has a great deal to do with the effect of anæsthetics, particularly with delicate persons who are the subjects who most require these agents.

Dr. R. G. Snow said it is absolutely impossible to predict what results will follow the giving of anæsthetics, and thinks that the greatest care should be exercised in employing them. It should be given slowly, and the person should be allowed to have plenty of air with the anæsthetic. Does not deem it prudent to give it to a lady, unless she has one or more of her friends with her. He then read the following account of a new agent from one of the public papers, viz: "The *Berlin Correspondent* says that a new anæsthetic has been lately discovered by Dr. Liebreich, to which he has given the name *Chloralhydrat*. It is highly spoken of by the faculty, and is said to be superior to chloroform, producing a more complete state of unconsciousness, while it neither induces feebleness nor leaves any bad effects behind. A medical gentleman has informed us that he has held rabbits from 12 to 14 hours under the influence of *Chloralhydrat*, during a part of which time he kept them suspended over the back of a chair, and as soon as they wakened up they displayed their usual activity and fed with unimpaired appetite. We have also learned that the newly discovered body has been most successfully

applied as a sedative in the treatment of the insane. *Chloralhydrat* resembles chloroform in appearance, but is not so heavy, and, being much less volatile than that body, it has, of course, a feebler smell. On the tongue it has a sharp, but not an acid taste, and, though it reminds one of chloroform, it gives the sensation neither of the warmth nor sweetness of the latter substance. *Chloralhydrat* is absorbed and not inspired, and in this respect it differs from all other anæsthetics. When liquid ammonia is added to a solution of this body chloroform is precipitated."

Dr. French always wishes to get the patient into an entirely unconscious state before proceeding to extract. Thinks one of the causes of unpleasant results is impurity of material. The best commercial ether is unfit for anæsthetic purposes. He has had excellent results from a mixture of three parts of chloroform, to two of ether and one of alcohol.

Dr. Whitney, in reply to Dr. Requa's inquiry, said that there is always a great loss of animal heat during the administration of anæsthetics, but does not think that the sinking sensation arises from that cause, but from the lack of a sufficient amount of stimulation from the blood to the brain. He thought that hysterical symptoms are likely to follow when given to females during catamenia. Statistics show that the large majority of fatal results have been with robust persons, and that a fatty condition of the heart has been found very frequently in post mortem examinations.

Adjourned.

#### AFTERNOON SESSION.

"Filling over exposed pulps, and how to do it successfully." Dr. Daboll, essayist.

Dr. Barrett asked what course Dr. Daboll would pursue in a case where the tooth had been aching, and the decay in a position difficult of access.

Dr. Daboll said he did not think it was possible to save the nerve after congestion has supervened.

Dr. Stainton asked if a portion of the nerve could not be amputated and the remainder preserved?

Dr. Daboll thinks it cannot be done with any degree of certainty.

Dr. Barrett wished to know what is meant by congestion?

Mr. Chittenden said he understood congestion of the nerve to be that condition when from any cause a larger amount of blood has

been carried into the nerve than has flown out of it, thus causing the whole nerve to become swoolen and painful, a condition which, unless speedily relieved, must prove destructive to the nerve. He does not believe that a nerve that has been in such a condition for twenty-four hours can be preserved.

Dr. Leach has confined his practice to a great extent to "doctoring up old teeth," that have been giving more or less pain. In such cases he removes the decay as much as possible from the walls of the cavity, but, leaves the softened dentine immediately over the nerve undisturbed, and fills with os-artificial. He endeavors to save every nerve alive if possible.

Dr. Bristol asked if a nerve might not, in some instances, change its nature and become a fungus?

Dr. Daboll has never seen a fungus inside the nerve cavity.

Dr. Hodge had a case recently, in which there was a fungus growth as large as a pea.

Dr. Bristol is positive that a nerve cannot be restored to health after congestion has supervened. In such cases there will be a fungus growth found on careful examination.

Drs. Barrett and Daboll are of the opinion that there can be no fungus growth unless the nerve has been destroyed.

Dr. Requa would not attempt to preserve the nerve in an incisor after it has been wounded; would destroy it and fill the nerve canal.

Dr. Beattie frequently wounds exposed nerves in childrens teeth to relieve congestion, and fills at once. Has been very successful with this method of treating such teeth.

Dr. Souehwick asked whether Dr. Requa uses arsenic in the incisors?

Dr. Requa. Yes.

Dr. Southwick thought dentistry was too old now, to admit of employing arsenic in these teeth. He would remove the nerve with a broach. In most cases it can be done with very little pain. He would then fill the root at once, and thus preserve the color of the the tooth. Does not destroy as many exposed nerves now as he was formerly accustomed to do. Now, when a tooth is presented to him in the above condition, he first fills the tooth with os-artificial, and when that has become hard he removes enough of it to admit the forming of a properly formed cavity, and fills it with gold. He said

he was glad that the discussion had taken the form that it had, as he feels that it is a matter of great importance that as many teeth should be preserved alive as possible.

Dr. Squires asked Dr. Southwick whether he used the os-artificiel immediately after applying the creosote, and whether the nerve would be found in a healthy state if examined at a future time.

Dr. Southwick said that every tooth treated as he had indicated could not be saved, but a large majority could. He related a case in which a tooth had been treated in this way, in which the nerve was perfectly healthy at the expiration of two years.

At the close of the discussion, there being a half hour before the time fixed for adjourning, Dr. Geo. B. Snow, from the Buffalo Dental Manufacturing Co., exhibited several old vulcanizers which had exploded while being used. In one a small piece had been blown out about two and a-half inches from the top. A longitudinal section had been cut out of it, which showed that the copper had been dissolved away till it was not much thicker than a sheet of paper. This thin part of the section was about an inch and a-half long, and when placed back into its original position, showed that the dissolving had taken place at the water-line.

Dr. Whitney said that he believed more or less sulphuric acid was generated in the vulcanizer, which in process of time would destroy the copper at the water-line so much that all would be liable to explosion. He urged every one present to use the greatest caution, as when vulcanizers are old, allowing the thermometer to rise too high would be attended with great danger.

Dr. Hayes expressed himself with great earnestness, with regard to the care necessary to be exercised while using vulcanizers. A man might as well place a loaded bomb-shell with the fuse lighted, in his laboratory, and go away and leave it, and not expect it to explode, as to leave his vulcanizer without care while the steam was up. Adjourned.

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## SELECTED ARTICLES.

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### CAPPING EXPOSED PULPS.

BY A. O. RAWLS.

[Read before the Indiana State Dental Association.]

The delicacy of this operation must be apparent if we but note the

fact that the Dental pulp is one among the most highly organized structures of our body, and responds to morbid influence through the medium of the most sensitive nerve of the entire nervous system. Besides the difficulties arising out of those conditions, it is enclosed within a wall of solid, unyielding bone, the resistance of which would prove quite an impediment to success, should the operation be performed in a rude, bungling manner, or at a time when inflammation was too great to admit of the probability of its being overcome in the natural way of vital resistance and recuperation. Viewing the subject in the light of other days, when the practice of capping an exposed nerve was in its incipency, can we be surprised at the limited success met with and the meagre support it received at the hands of our profession then, when to-day, with a theoretical and practical experience of twenty or thirty years in advance, and many valuable improvements to render us assistance, we fail in not a few of such cases intrusted to our care. Indeed, quite a number of the profession have abandoned the operation to considerable extent, resorting to it only when the pulp presents unmistakable signs of freedom from morbid conditions, while upon the other hand a few have turned their attention to therapeutical treatment when necessary, and, judging from the amount of success obtained in a comparatively short time, we would at least consider the practice commendable and well worthy a thorough trial.

When the practice of capping, for the purpose of protecting an exposed pulp first began to attract attention, its enemies were numerous and for several years the reign of arsenic or its kindred preparations continued unabated, but now we may rejoice in the thought that this fell destroyer has seen its palmiest days, and the possibility of saving an exposed pulp, when there exists but little inflammation, is no longer a question at issue, the only question being one as regards the relative value of the materials in use and the most satisfactory mode of manipulating the same to secure the best possible results.

If I mistake not, capping an exposed nerve or pulp dates prior to the operation of destroying it, and the first material used was the charred surface of the pulp itself, the actual cautery being used to produce the char, and this broken down tissue left remaining as a shield or barrier between the living pulp beneath and external filling, as might be inferred from the rudeness of the means resorted to and the nature of the parts involved, its use was not long continued; but the ill-success of this first attempt to fill over an exposed pulp, in all

probability gave rise to the employment of means for its entire destruction. Shortly after this, metallic capping merged into use, sheet gold taking precedent, though on account of its conducting properties, soon yielded its laurels to lead and other materials of less heat-conducting powers, all of which have gradually fallen into disrepute; lead from its ease of adaptation to the wall of the cavity, and from the supposition entertained at one time that the oxyd deposited beneath the capping proved beneficial in allaying inflammatory action, has enjoyed quite an extensive reputation. In the mean time, chemical science has not failed to appreciate the difficulties of our position, or been derelict of her duty, but has advanced nobly to our assistance, and presents a material for our consideration which bids fair to eclipse all of its predecessors, and already opens a new era in the capping of exposed pulps. Its composition is chloride of zinc, in solution and calcined oxyd of zinc; and, I believe, the credit of first using this article as a filling for decayed teeth is due to Drs. Keep, of Boston, and Metcalf, of New Haven. Since then, not unlike other articles of merit, it has come very gradually into general use, improving in quality as its deficiencies were ascertained and the demand more extensive, until to-day it occupies a position enviable indeed, standing upon its own merits an auxiliary in operative Dentistry worthy of our esteem and recommendation. As a protective shield for an exposed pulp it has not been in general use many years, though for complete fillings and other purposes in which it has rendered valuable services, it has withstood a fair test for a considerable time.

All materials employed, or that have been in general use, and every theory linked with practical application in the Dental catalogue, has been burdened more or less with imperfections and objections, and as a matter of course, oxy-chloride of zinc has its complete share, and if we were to judge and be governed by the opinions of a few, it certainly has an overdose.

Prominent among the objections urged against the use of this article as a shield over an exposed pulp is, first, that it is entirely too porous, consequently, when in close proximity to the pulp, would have a tendency toward absorbing all poisonous or effete matter existing at the point of contact, thereby rendering it unfit to be placed in such near relation with living tissues, laden as it would be with such impurities; second, that the escharotic properties possessed by the chloride is dangerous to the life of the pulp, and many cases are

cited in which its use (rather abuse) has destroyed the life of this valuable structure. There are other objections, but these which I have noted seem to be the principle ones against its employment in this direction. As to the first mentioned, it is only necessary to state that our endeavor should be in the preparation of such cases to rid, if possible, the pulp and entire decayed cavity of the least indication of disorganized tissue or any like impurities. Should there none form after the operation, the difficulty is overcome. To the second objection we would reply that a judicious use of the os-artificiel, when well prepared, would obviate all such results, as the chloride is not taken into the circulation, and it is hardly probable that its use would destroy the pulp, unless employed in such quantities as to produce a great amount of inflammation.

The manner of introducing this material, and its consistency at the time it is introduced, tends as much, probably, to govern the results of the operation as any thing else concerned, and is, no doubt, too often overlooked or entirely disregarded, and failures from such neglect are credited to the material.

Should it be mixed too thick or allowed to dry out too much before introducing, the force required to adapt it closely to the walls of the cavity would give rise to congestion and consequent inflammation, or if placed in gently while thick as before, then there would exist a lack of cohesion in the particles of the filling; also, imperfect adaptation to the exposed surface of the pulp, the result of which would be crumbling of the cap upon introduction of the filling over it, or a place left between the shield and pulp, which condition would surely induce strangulation and death of the part involved, while a reverse of this mixing and introducing it of too thin a consistency would prove equally disastrous. We are all aware that a solution of chloride of zinc enters into the composition of os-artificiel, and that it is endowed with powerful escharotic properties, and in case we should incorporate this substance too freely with the calcined oxyd, its effects would not only be very powerful, but would tend toward the production of no small amount of irritation, and probably to such an extent that the vital forces would not suffice to re-establish healthy action. We will grant, however, the possibility of there being sufficient reaction of the recuperative powers to counteract the irritation existing, in which event we have left for our consideration a thoroughly charred surface of the pulp at the point of exposure. The question now arises as to the probability of the char remaining

*in situ.* If such were the case we would apprehend no danger whatever, though I am inclined to the opposite opinion that such is not the condition of affairs, but that the char is removed by absorption, not taken up by the capping material, though through the medium of the absorbent vessels of the pulp stimulated to increased action as a consequence of great irritation, thus ridding itself of the cause and leaving an intervening space between the filling and pulp, corresponding in size to the extent of broken down tissue, thereby rendering the possibility of success doubtful, as the space could not certainly exist without more or less trouble. However, this neglect should not argue against the usefulness of the material in such operations, but only guard us against its abuse. As regards my manner of introducing the oxy-chloride of zinc over an exposed pulp, I have nothing new to offer in that direction, and in conclusion would say that this material, when properly prepared and manipulated with the care that the delicacy of the operation requires is, in the vast majority of cases, far superior to any other article extant as a protection for exposed pulps or sensitive dentine, and especially is it invaluable as an additional shield between the filling and nerve, when there exists but a thin lamina of dentine over the latter.—*Dental Register.*

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SULP. ETHER AS AN ANÆSTHETIC.—So much has been said in reference to nitrous oxide gas, that we fear that the profession will loose sight of the valuable agent, *Sulp Ether*. Some of the advantages resulting from the use of ether may be mentioned. It is always at hand. It causes no discoloration of the lips like that purplish hue imparted by the "gas," and throbbing of the pulse may be as plainly counted as when the patient is asleep. There is danger in using ether, as there is danger in using everything else, but when *used with judgment*, there is far less danger than when we use the murderous chloroform. Dr. Morton will receive the thanks of posterity for his great discovery, as long as pain endures.

Ether must be of the best quality, with the *spec. grav.* of -750. A fair test of the purity of ether is made by dropping it upon bibulous paper, when, if it is good, it will be found that it has entirely evaporated, leaving no smell.

It is well, when using ether, to get the patient's mind free from all care; get them to sit easily in the chair, dress loose, and after placing the cork (with a long string attached) in the mouth, place a sponge in the folds of a rolled towel, you will then have a tube which

you can place over the patient's mouth and nose. Then put about 1 oz. of ether on the sponge and *slowly* place it *near* the mouth. When he has breathed two or three times, you may place it *upon* the mouth and nose. You must not close the distal end of the napkin, it must be an open tube. It will be seen, then, that the air, in small quantities, enters through the pores in the sponge. Put on a spoonful or two more ether, when it is needed; it requiring from 1 to 4 ozs. Some commend the use of chloroform with the ether. We never approved of the plan. Heavy breathing, lifting the hand and finding it to fall *dead*, and pinching the skin of the hand, are the tests of when etherization is complete. Never give ether till two hours after the patient has eaten his meals; it causes vomiting.

When you have finished the operation, bathe forehead with cold water, or let the patient smell of ammonia. Never give brandy. In some cases the patient will seem to strangle. This is caused by the tongue falling into the glottis. Then you must pull the patient's tongue forward with your forceps.

These crude hints may save you the necessity of buying a costly gas apparatus.—*Dental Office and Laboratory.*

## EDITORIAL.

### OPENING OF THE DENTAL COLLEGE.

From the following, forwarded by the Secretary, it will be seen that the long talked of school for the education of the future dentists of the Province, was opened for the reception of pupils on the 1st instant:

“ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

A meeting of a portion of the faculty of this institution was held at the Queen's Hotel in this city on Friday, for the purpose of opening the College. In the absence of the President, Mr. Chittenden was called to the chair.

It was then moved by Mr. O'Donnell, seconded by Mr. Callender and carried, That the following gentlemen be appointed Clinical lecturers to this College, viz.:—W. C. Adams, Toronto; J. Leggo, Ottawa; G. V. N. Relyea, Belleville; H. T. Wood, Picton; A. Bernard, and W. George Beers, Montreal; H. H. Nelles, D.D.S.; A. C. Stone, M.D., London; R. Rowe, M.D., Cobourg.

Moved, seconded and resolved, That the regular lectures in the

Dental Course commence on the 15th November, and that students be informed that arrangements have been completed so that they have the opportunity of obtaining preparatory instruction in the offices of Messrs. Trotter and Meyers, Toronto, whose offices will be open to them during office hours up to that time.

Moved by Mr. Callender, seconded by Mr. Meyers, and carried, That this faculty attend the opening lecture to be delivered by Prof. Caniff, M. D., M. R. C. S., England, of the Medical Department of Victoria University, this evening at eight o'clock. The meeting then adjourned.

In the evening the faculty attended an interesting and instructive lecture by Prof. Caniff, in the Victoria College, Yorkville. The Venerable Dean, Dr. Rolph, at the conclusion, announced that the regular Medical lectures would not commence till Wednesday next, the 6th inst., they having been postponed in honor of Prince Arthur's visit to Toronto."

We had the pleasure of an interview on that occasion with Dr. Rolph, the Venerable Dean, Dr. Caniff and several others of the members of the faculty of Victoria University, and were particularly pleased with the interest which they manifested for the advancement and elevation of our specialty, and we feel certain that those Dental students who place themselves under the tuition of these gentlemen, will derive the greatest possible benefit from so doing.

As an attendance on the lectures to be delivered at the Medical school, is of the greatest importance to those who wish to excel in dentistry, we hope that all who intend to present themselves for examination before the Board at its next session, will attend them.

There are a large number of dentists in the Province, who have been practicing a less time than five years, who will be up for examination at some future time, and we would most strongly urge them to avail themselves of the opportunity now afforded to attend those lectures which they feel they most require. In the Dental Department proper, which will be opened on the 15th prox., the principal part of the instruction will be given by Messrs. Callender and O'Donnell, who are well qualified for the positions which they hold. They will be assisted by Messrs. Trotter and Meyers, in whose offices the students are allowed to remain until the regular session commences.

It was thought advisable to ask the assistance of the gentlemen named in the Secretary's report, to assist the Professors at different

times during the term, by giving the class a short course of Clinical lectures on such subjects, connected with dentistry, as they may choose. Several of them have written to us that they will most cheerfully undertake the duty which has devolved upon them, and from the high standing which all these gentlemen occupy, we feel that we can congratulate the students on many very profitable treats in store for them this winter.

C. S. C.

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### VALEDICTORY.

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A position in the great metropolis of the west, Chicago, having been offered the subscriber, which promised a better remuneration for labor than the practice of dentistry, he has deemed it desirable to accept it, but with many regrets for having to sever himself from the country he loves, and the many dear friends acquired during a residence of over a quarter of a century in the Dominion of Canada. Among the most valued of his friends were many of the Dental profession, whom he leaves with feelings of kind and grateful remembrance, which will be cherished as long as he lives. Having honestly (as he thinks), devoted himself to the profession of dentistry in Canada, for a period of over fifteen years, during which time he has done his best to benefit the profession and his patrons, and having had the honor of assisting to place the profession on a respectable footing, and to complete the first volume of the *Canada Journal of Dental Science*, he retires from the field with the best wishes for the profession in Canada and the success of this Journal, and with the hope that every man will rally round the two worthy editors and proprietors, Messrs. Chittenden and Beers, whom he has left behind, he begs to retire.

R. TROTTER.

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**PRESCRIPTIONS IN ENGLISH.**—*The Philadelphia Medical and Surgical Reporter*, one of the best of our medical exchanges, urges upon the profession the propriety of writing prescriptions in the English language only, instead of the abominably bad Latin generally used. A most sensible suggestion say we.

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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DYSPEPSIA ORIGINATING IN THE ABSENCE OF, OR DISEASE OF THE  
TEETH.

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BY W. GEORGE BEERS, MONTREAL.

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Among the various causes of dyspepsia there are several having a direct bearing on our specialty, wherein our advice and skill as dentists, will often bring about the only permanent cure. I refer to those cases which originate in a diseased condition, or the entire absence of the teeth, and consequent imperfect mastication, deglutition and digestion. Without interfering with the prerogative of the physician,—a breach of ethics against which we should always guard,—we may often remove *the cause* or origin of the disease, and lay the foundation of certain recovery. Without the food is properly masticated, the different glands of the mouth, and the follicles of the mucous membrane are not aroused to activity, and the aliment to be taken into the stomach, is unprepared for the act of swallowing, and chymification. The buccal secretions are absolutely necessary to digestion, though their effect is principally mechanical; the gastric juice being the great solvent. Food insufficiently triturated, and not well mingled with the saliva, is not as soon acted upon by the gastric juice, and indigestion with its numerous attendants, is almost invariably the result. The secretions of the mouth which lubricate the food, are furnished by the mucous membrane, and three pairs of glands—the parotid, submaxillary and sublingual—very necessary to health, but very troublesome to control, as we all know, during diffi-

cult operations of filling. Without these buccal fluids, food would not digest; to stimulate them to healthy action, the food must be well masticated. Dyspepsia originating in absence of the teeth, is then easily understood, and one important adjunct to its cure, viz., artificial substitutes, clearly perceived.

Another cause of dyspepsia may be traced to the presence in the mouth of diseased and dead teeth and roots, connected possibly with inflammation of the gums, abscesses, and a chemical change in the salivary fluids. It is easy to understand how and why diseased teeth and roots, and the presence of morbid matter, vitiate the secretions, and how they interfere with mastication. Bad breath is produced; every inhalation affects the sensible tissues of the lungs; every mouthful of food is impregnated with the morbid matter, carried to the stomach, and taken up by the nutritive vessels. In the course of time the particular teeth are too painful to use, and the consequence is that the food is half masticated, and the owner avoids even hygienic precautions. Pain of itself disturbs the digestion; and when we add the vitiation of the secretions, diseases of the teeth and gums, we have a dyspepsia quite as difficult to eradicate, and more painful to bear, than other complications of the disease in which the teeth bear no part.

Cases in practice multiply in the course of years, and every dentist can, doubtless, refer to his own experience and observation. I remember one remarkable case, of a lady who had been treated for dyspepsia for two years by her family physician, with little or no benefit. I had an opportunity of examining her mouth, and found nearly all the bicuspid and molars in both jaws broken off by decay, to the roots. For over two years the crowns had been destroyed, and there were always one or two aching. At the time I saw her mouth, several were ulcerated, and discharged thick viscid matter on pressure. Upon suggesting their extraction to her medical attendant, and venturing to accuse them as the cause of her constant dyspepsia, he advised her to submit to the operation. The following morning he administered chloroform, and the roots were drawn. After recovering from the influence of the anæsthetic, her weak stomach rebelled, and she vomited several large pieces of baked potatoes and meat, not half masticated. The evidence was indisputable. After a few weeks her general health improved, and by aid of artificial teeth she could eat and enjoy her meals, and finally she entirely recovered, and is now perfectly convinced of the origin of

her disease. Instances of impaired digestion caused by absence of the teeth, and health re-established after the introduction of artificial substitutes, are not rare. I will close these few lines on an important subject by quoting a peculiar case from my note book.

March, 1867. Mrs. R——, had been troubled for several years with indigestion, and could find no cure. Her physician had the good sense to inquire into the state of her teeth ; but one day taking out of her mouth a full upper and lower set on vulcanite, she laughingly assured him the cause was not there. In March, 1867, she broke one of the front blocks of her upper set, and wished me to replace it. On placing the set in her mouth I noticed that the incisors and cuspids were the only teeth that antagonized, and that from the cuspids back, on both sides, there was a space of nearly quarter of an inch between the upper and lower teeth. On inquiry I found that she had had the sets made by a quack dentist, on the steam principle of taking the impressions in the morning, and giving the patient the sets in the evening of the same day ; and that on returning to show the difficulty to the maker, she was told that the case could not be otherwise, "owing to a peculiarity in the shape of her jaws !" To make a long story short, after getting new sets perfectly antagonized, she was able to triturate her food, and finally recovered her health.

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## FILLING OVER EXPOSED PULPS, AND HOW TO DO IT SUCCESSFULLY.

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BY G. C. DABOLL, BUFFALO.

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A little consideration of the form and nature of the dental pulp may help us to an intelligent appreciation of the kind of treatment it will endure successfully, for if knocked about the right way and with the proper materials, the pulp will endure a good deal of professional banging. The pulp cavity in shape corresponds to that of the tooth to which it belongs. The pulp has the same form, and according to Mr. Thomas Bell, is a very soft, gelatinous, semi-transparent body, having its surface covered by an extremely delicate, thin, vascular membrane, closely attached to it by vessels. The arteries which supply the pulp, enter the tooth at the apex of its root, and throw around it a network of circulation, indicating the great vascularity of this tissue. The larger arteries are deep, and communicate with the veins on the surface by great numbers of

looped capillaries. The nerves of the pulp come from the superior and inferior maxillary divisions of the fifth, and are seen to form a series of loops.

From the foregoing description, it will be seen that the pulp seems to be constituted of blood vessels and nerves, enveloped by a very delicate membrane, and blood vessels, nerves and membrane are in turn confined in the centre of the hard and unyielding substance of the tooth, which, in the event of any disease of the organ in question, serves to complicate the difficulties, and render the more doubtful any treatment, with a view toward the restoration to health. Now a healthy pulp and a diseased one, when we are treating cases of exposure, are two entirely different things, and the careful operator, on having a case presented for his consideration, will, as a fundamental rule, ascertain which he has to deal with, for with the primary treatment rests in a great measure the final success of the operation. If the pulp is exposed by carelessness in excavating, in a tooth that has never given any trouble to the patient beyond mere sensitiveness, we have a very simple diagnosis. From the description we have had of the pulp, we know that the mere wounding of a vein is exposure and must be treated as such. If the patient presents a tooth, in the cavity of which, on clearing away the debris, we can distinctly see the pulsation of the arteries, we have a different condition of things, with an equally simple diagnosis. Then we have cases of semi-exposed pulps, that is with only the slightest possible covering of softened dentine, that separates this mass of blood vessels and nerves from the air. These come under the head of exposed pulps, and of this condition we meet more than of any other, the treatment of which are as important and require as much skill as any. Now, we hold that the dental pulp is subject to the same law of health and disease that governs the flesh only to a certain degree, and that only so far as it harmonizes with its more delicate and sensitive nature. Because a wound in the arm or any other portion of the system heals by first intention, it does not necessarily follow that a wound in the dental pulp will do the same. A wounded vein of the pulp will close its walls the same as any other vein in the system, and if protected from irritating agents, will heal as perfectly; but if one of the nerves of the pulp is severed, or an artery ruptured, we very soon comprehend the distinction, by the result. A pulp that has once been thoroughly congested will surely die, and although we may treat it in this condition it will be of little avail as regards its salva-

tion. We entirely disagree with one of the luminaries of our profession, who claims to believe that a pulp may be saved even after ulcers have formed on its surface. The solid walls that protect it in a state of health, in its diseased condition, by confining and restricting its limits, ensure its destruction. The mass of arteries, veins and nerves takes on an inflamed condition, each separate nerve and blood vessel swells to its utmost limit, and is pressed and jammed into its neighbor until a partial or complete state of disintegration, which is synonymous with suppuration, takes place. We all know what an aggravation a ligature or tight bandage is to an inflamed limb, and that is precisely what the tooth is to the inflamed pulp. We must deal with the pulp before it reaches congestion, and therein lies our province as saviors; an irritation or inflammation can be met and subdued, a wounded vein may be healed, but beyond the primary or medium stages, very little can be accomplished.

With the primary treatment of the exposed or inflamed pulp, we come to the consideration of materials for filling, and appreciating the delicate nature of that organ, we must necessarily choose delicate substances, and those that can be adapted or will adapt themselves most perfectly and readily to the diseased surfaces, with the least irritation, and by the application of the least force. For this purpose we have as yet found nothing superior to Hill's Stopping, and oxy-chloride of zinc. Each has its peculiar merits and in special conditions there is a choice in their use. Hill's preparation being a non-conductor, effectually protects the pulp from thermal influences, and in cases of semi-exposure is, in our opinion, to be preferred for temporary fillings. For a wounded vein or other exposure, the oxy-chloride is far preferable. This can be adapted absolutely without the exertion of any pressure, thereby avoiding one of the principal dangers of the treatment. If we have a wounded vein, and there has been no previous irritation, as soon as the bleeding ceases and the cavity rinsed with warm water, we apply a little creosote from a pellet of cotton, just enough to moisten the parts immediately over and adjacent to the exposed place, and then fill with zinc. As soon as it is hard, say from ten to fifteen minutes, cut away, leaving enough in the bottom of the cavity to protect it, and fill the balance with gold. If done carefully and thoroughly under these conditions, a failure will be of rare occurrence. In cases of semi-exposure we rarely meet with one that has not been subject to more or less irritation, and there is very likely to be some lingering inflammation or

morbid condition, that must be corrected. These are the instances in which the patient has had a little pain, more or less severe, continuing for an hour or two sometimes, or again only a few minutes, owing to some thermal shock or sudden pressure. These we treat with creosote or carbolic acid, placing it in the cavity on a pledget of cotton, and sealing it with cotton and sandarac, repeat two or three times at intervals of thirty-six or forty-eight hours, and then fill the cavity with Hill's stopping. This will protect it entirely from thermal changes, and may be left in from four to six weeks, when, if there has been no trouble, remove the filling, and refill partially with zinc and cap with gold. If the tooth will endure the perfect sealing with the gutta percha for a month or six weeks, we regard it as evidence, in ordinary cases, of the health of the pulp. We leave them longer if there is any doubt, or if the case is a bad one, for time is the test, two or three months in the worst conditions at the farthest, with careful manipulation, will ensure nineteen cases out of twenty.

A pulp exposed by the natural decay of the tooth, and that has a portion of its surface entirely denuded, is a dainty subject to deal with. Before it has arrived at this condition, it has passed through many tribulations, and only escaped congestion by some rare and happy combination of circumstances. There has been of course some inflammation, the result of numberless thermal shocks, if nothing more, and this adds to its natural sensibility a morbid condition that complicates the case excessively, our first step is to be assured of the absence of congestion, and one of the most reliable indications to our mind, is the vitality of the nerve filaments in tubuli, and a partial excavation will soon satisfy us; this with the knowledge we can get of the subject as to the amount and character of pain experienced at different times, will give us a tolerably accurate diagnosis. Having removed as much of the decay as possible we lay a pledget of cotton saturated with creosote directly over the part exposed, and seal loosely with sandarac and cotton, great care being exercised that there shall be no pressure; after one or two treatments fill the cavity with zinc. If all right, the pain caused by the filling will pass off in from two to six hours. If subsequently the tooth is very sensitive to heat and cold, cut away a portion of the filling and cap with Hill's stopping. Such cases as these we leave for three months, then remove the filling and ascertain the condition of the pulp; if we find it alive, refill with zinc and cap with gold. We have had a few

cases in which the nerve died, the creosote neutralizing the gases and the tooth giving no trouble up to the time it was examined ; but these are rare, and it will be found that inflammation will supervene in a short time after the temporary filling has been introduced, if everything is not all right. When there has been but very little previous irritation, we do not stop to treat with antiseptics, but moisten the cavity with creosote or carbolic acid and fill immediately with zinc. In numbers of cases where the tooth has been presented in an aching condition, it being the first instance, we have treated and filled with perfect success.

We do not claim infallibility, but give this as our mode of treatment, from which the percentage of failures has been so small, that we feel justified in claiming for it the careful consideration of every man that is not already practicing it. We can save teeth by extirpating the pulps, and if it comes to the worst it is beyond a doubt a great blessing ; but as compared with the salvation of the pulp and restoring the organ to its normal condition of health and usefulness, it is not a question for argument.

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## PROCEEDINGS OF SOCIETIES.

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### AMERICAN DENTAL ASSOCIATION.

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BY W. C. HORNE, D. D. S., NEW YORK.

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#### REPORT AND DISCUSSION ON DENTAL PATHOLOGY AND SURGERY.

Dr. Atkinson's report opened with the statement that discoveries in this field followed one another so rapidly that there seemed to be little definitely settled, and even that was always open to revisions and allowances for error. The seat of function is not generally agreed upon, but the power of appropriation and rejection of substances is usually attributed to the *cell*, though that term is a very ambiguous one. In a sense, all contained within the dermal sheath of the entire body is cell-contents, and this sheath or skin the cell-wall proper. The inception and slight degrees of pathological movements are only perceptible to the informed and specially erudite mind, while grave and continued disturbance is readily recognized by the commonest observers. Hence the beginnings of serious troubles are unrecognized, or permitted to declare themselves, with the delusive hope that they may be overcome by the natural forces of resist-

ance. Instances in illustration might be multiplied, taken from practical experience, of ignorance in diagnosing cases, prognosticating results, and assuming to assess the amount of compensation, in money consideration, for operations quite beyond their power to comprehend, much less ability to execute. These circumstances prove to be obstructions to advancement to the weak, but only incentives to those who are really in earnest.

The author then proceeded to discuss the character and development of cells, tissues, organs, and systems, as dependent upon two principal conditions, namely, plan and pabulum. As men advanced in apprehension of fact and philosophy, the most obvious phases first occupied their attention. First the *bodies* of animals were known to grow and diminish, which suggested the idea that these changes take place in the solids of their bodies; hence the solidal pathology. A closer inspection led to the adoption of the view that all nutrient changes take place in the *fluids*; hence arose the humoral or fluidal pathology. The fluids having become the object of special attention, they were found to differ greatly in the alimentary, vascular, and neutral tracts, and the inception of the nutrient movements was supposed to take place exclusively in the neutral tracts: hence the neural pathology. At length the microscope was discovered, and by its help elemental bodies were brought within the range of sight and measurement; and hence arose the cellular pathology. Thus, step by step, the minor propositions in organology have been discovered, until we now stand upon the verge of a grand pathology, including all past phases as requisite to its consummation,—the coming pragmatic pathology.

The various stages of advance of pathological science are shown to have their correspondence in the stages of development of human society, involving a review of the progress of the formation of individual bodies, from the simplest up to the most complex forms. . . . The human system being constructed upon the basis of the destruction of the various inferior types of existence, must include every typical form, from crystal to mucous. . . . If each constituent cell and tissue of the human body continued in its particular place, and elaborated the function of its locality as long as the body continued in existence, we would then have no disease of any sort, and man would be well until spent in every part, as a completely consumed candle exhales into the gaseous state. Alternation of gen-

erations in cells is the prerequisite of growth and development. . . . The metamorphosis of the tissues,—that is, the common law of the economy,—happily for mankind, does not hold in the teeth; and hence, operations upon them, when properly performed, are permanent in character. . . . How to do it involves two general propositions: keep the teeth clean, and thus secure their integrity; where integrity is not attained, or is lost by fracture or decay, remove all imperfect, and restore the form and size of the tooth.

Dr. Atkinson said the reason that more is not known on this subject is because of the general belief that there is no money to be got out of it, and this idea necessarily closes the field of vision beyond. The majority of our superior men have obtained their knowledge through long and earnest efforts. If he could supply the lost brick in every man's pathology, he should be very happy to supply it. In the matter of operations of a surgical nature, the dental practitioner could put to shame the general surgeon, from his greater experience with and familiarity in the use of his instruments. Dental pathology was much more clearly defined than general, because of its limited range and the uncomplicated character of the structures; hence, more definite and understandable by less erudite minds. In enamel we find the exact analogue of the mineral kingdom, whose mode of aggregation is an expression of the laws of crystallography; and in the dentine, that of the vegetable kingdom, where nutrition is conducted by a to-and-fro movement of fluids in tubes; and in the pulp we have the exact and veritable mode of nutrition known to the animal kingdom, which is actuated by anatomical elements called cells. It is indispensable that it should be first known what *nutrition* means, and that all the tissues work up through their various grades by the formation, from an amorphous mass of chaotic substance, of the anatomical elements distinctive of the tissues. In the mineral kingdom we have the law of crystallography displayed in simplest and most composite expression. In the vegetable this is repeated, with an additional complication and correlation of elements, so that a vegetable is but an advanced mineral, with the plus something that constitutes it a vegetable. In like manner the animal kingdom grows out of the vegetable by the process of disintegration and reconstruction on a higher plane; so that a complete understanding of animal nutrition involves both vegetable and mineral modes of destructive and constructive assimilation; and happy for us is it that the field of our labors is thus circumscribed, and that nature has

preserved in the enamel the reminiscence of minerals, and in the dentine that of vegetables, which tolerates interference to such marvellous extent as to kindly submit to the removal of their sickened molecules and admit of their substitution by foreign substance.

The knowledge of these principles has grown so insidiously upon us as to extend the field of study necessary to make diagnosticians, so that to-day almost the most ignorant know more than the fathers of thirty years ago. To be respectably successful to-day, we must be able to master and control the whole field, in diagnosis and in execution of the redemptive procedure in pathological and surgical cases. The principal reason why we of to-day know more than our fathers is the result of the labors of a single man, some two centuries since, who penetrated the field of organology to a depth before unknown, unsuspected, and unlooked for. I refer to the renowned Leeuwenhoek, the inventor of the microscope. Important as was this discovery, it took a century and a half for learned men to acknowledge and appropriate it; and the necessity is upon us now to review by the light of this discovery the works of the best laborers in this field, to eliminate error and demonstrate true positions. The living economy, from lowest crystal to highest mammal, selects and appropriates, from merest pabulum, that of which it stands in need, wisely adjusting each elemental body in the proper relation to its fellows, to construct the harmonious whole of simplest or most complex body, and this is the measure of the physiology of the organic world. In the human organization, the culmination of mind and matter, anything that can exert an influence upon us, may tend to continue this harmonious functional action, or be the point of inception of inharmony, thus inaugurating pathological states. Thinking in an unintermitted effort, may so derange the nutrition of certain territories as to result in disease; but so few men are capable of thinking, and the many are so ready to accept at second hand and adopt the thoughts of others, that we need not very much distress ourselves with the fear of pathological action from this cause. Irregular breathing has its effect upon all the other functions of the body, by arresting the regular gyrations of circulation and digestion that take their origin in the respiratory function. Sudden arrest of mental attention and intense concentration of this same effort, are capable of producing this effect of stoppage of respiration for the time, until the mental tension is changed so as to permit the respiratory function to resume its sway. I merely mention these to show how important it is for

us to remember how our life is but a vapor, capable of being dissipated by apparently insignificant causes. Imperfect bodies are alone amenable to pathological action; perfect bodies having no foreign affinities. Wherever the enamel is imperfectly formed at the junction of the denticles that constitute the tooth, and leaves open fissures at these locations, I would advise the removal of all the imperfect portion, and even some of that that is well formed, if necessary, to secure a good cavity in which to impact the gold, the form of which I would prefer to be heavy foil—Nos. 8, 10, 15, and 20. It is fashionable to fill with gold now, but the material is not so important as the manner of using it. Any indistructable matter that agrees with the ghost or tygal form of the tooth, properly used, should preserve it indefinitely. He had never filled teeth so satisfactorily to himself as in 1869, because the range of his preception was larger, and the means more extended and more readily obtained; the principle of which is heavy foil, and the lead mallet, ranging from 4 to 12 ounces in weight. We often hear one dentist complain of the work of another; but no one is clear in this matter so long as he has the painful or pleasing recollection of the like ignorance of which he complains in another. We are all making advances, and elevate our standard as we advance; hence that which was once excellence is now inexcusable blundering; but many have the happy faculty of forgetting that they ever blundered or fell short of their present high standard. The daily prayer of my life is that I may be able to do no more mischief, do all the good possible, and be the highest expression of dental knowledge and skill on the planet; and I would to God that every one in this presence would heartily and honestly make the same prayer.

There is no pure expression of physiology on the planet except in the mineral kingdom. All former definitions of a cell are a *sell*. The same productive process obtains in a nucleus as in a cell; that which is necessary to a nucleus, or a nucleolus, or any other body capable of being seen, or the unseen elements out of which these are composed, and are capable of conception, but not of perception, are all endowed with three essential elements—centre, surface, substance. The machinery of sense can only produce an image or impression which is capable of being perceived by the sentiency which is behind all his machinery.

Dr. Buckingham. What is a nucleated cell? Describe it.

Dr. Atkinson. A nucleated cell, to be understood, must be com-

pared with non-nucleated and other cells of varied constitution. Simple cells, in general, are said to be made up of cell-wall and parenchyma, or inclosed substance, and are the examples of non-nucleated cells. A nucleated cell is this same cell with a central portion of its parenchyma so concentrated as to diffract or reflect some portion of the light pencil, thus making it visible as a darker spot. Multiplied dark points constitute the many-nucleated cells. If we wish to clearly understand what is meant by the nomenclature of the books discussing cellular pathology, we must study each author by himself, for there is no settled agreement as to what shall constitute a correct nomenclature. A molecule is an ideal body; a granule is an aggregation of unknown chiliads of these, and thus becomes a perceptible body, capable of casting its shadow or image upon the retina; itself made up of like constituents, with a similarity of tension, of force and form, the essential requisite of sight. The desire to know, and the attainment of knowledge, hold a relation to each other; but the desire to attain, and the ability to communicate, are not father and son, but great-grandfather and great-grandchild. Hence the greatest novice may puzzle the greatest philosopher to satisfactorily answer, to his apprehension, the queries he may put forth with almost spontaneous effort. The difference between minds is but one of degree, for all have to be developed from out of the dark ocean of non-knowledge. Probably there is no one in this presence that is not the superior of all the others in some of the ripening stages of matter and mind—the correlative necessities of substance in human beings. So let us apply ourselves with all our might to essay the solution of every query that can by possibility arise; esteeming the query itself as the proof and the prophecy of its solution to full satisfaction, on the plane in which it makes itself heard to the mind that propounds it. Molecules, then, may be said to be the result of the tendency to the centre of infinitesimal atoms; while granules are the combination of these at the centre, with a tendency from the centre; thus we have the first letter in our alphabet, of form and function necessary to the nutrition of any body. To bring this within the range of our senses, we must accept this supersensuous process. All this is capable of being brought within the purview of conception and perception, the dual primates of sense. Opacity stands in the way of pursuing the alternations of generations of cells in the production of tissues in the human body; but in the transparent bodies of young fishes, reptiles, and fowls there is enough

apparent to sight to suggest and establish the role of the elements of the organs of even the highest bodies. Most of that which we have already attained in this direction we owe to our Transatlantic brethren. We as Americans need more of the German persistency of mind that pursues the discovery and proof of a single point in biology during a long and laborious life, and less of the diffuseness of the *omnium gatherum* character of the American type of pathologists.

In consequence of a very little study in this direction, he was no longer able conscientiously to destroy the pulps of teeth under any circumstances; and, in testimony of the confidence with which he relied upon the doctrines here enunciated, he would detail a case which occurred the previous Friday. Female subject; superior canine tooth, exposed pulp; bled; touched with creasote, which arrested bleeding; filled with oxychloride of zinc; proceeded to work in another direction till the filling had set; then cut away oxychloride, leaving sufficient for a cap, and filled with gold; and if it is not a success he should be very much disappointed.

Dr. Buckingham. What takes place between the oxychloride and the pulp?

Dr. Atkinson. There is an affinity between the hydrochlorate of zinc (the fluid used with the oxide of zinc) and the albuminoid substance of the pulp, and at the point where the satisfaction is complete of this affinity an insoluble pellicle is formed. Beyond this, on the inner side, the coagulation is less and less, becoming simply astringent, collapsing the capillaries, driving the blood column—blood corpuscles and all—into the venous radicles, until the recoil of the column by the *vis a tergo* of the circulation reopens the arterial radicles and the capillary system, re-establishing healthy circulation, without the possibility of setting up the inflammatory process, or inducing the exudation of a single pus corpuscle. In case of a very weak pulp, and strong and abundant solution of the hydrochlorate, the coagulation may be effected to the foramen.

Dr. Buckingham. Is there any pain during any part of the operation when the pulp is in a normal condition?

Dr. Atkinson. Exposure itself is an abnormal state; but I have no pain manifested by my patients nor the patients of those who have faithfully followed my directions, as far as reported to me, and I have had many of these. The reason of there being no pain is the

free use of creasote. I never purposely destroy a pulp, and that dentist is weak or wicked who would do so.

Dr. Bogue. How would you preserve a pulp that is exposed and partly suppurated?

Dr. Atkinson. That question can best be answered by detailing my procedure in just such a case. A portion of the pulp had sloughed away. I resorted to my usual treatment in such cases, sopping the pulp with creasote, and covering with cotton and sandarac varnish; this dressing was continued for three weeks; at the end of that time the whole of the body of the pulp was converted into a mass of carbolate of albumen, and came away upon taking hold of it, leaving the legs in the roots in healthy and sensitive condition. Six other pulps in similar condition in the same mouth were treated in the same manner without appreciable loss of substance. He was down on the death penalty; as long as there is life there is hope. Every man in dentistry should bring all his best powers into exercise in the practice of his profession, or he is a sinner.

Question. Does the application of creasote tend to lessen the vitality of the pulp?

Dr. Atkinson. Creasote destroys the periphery, which must be thrown off; and a pulp may be thus destroyed by continued applications. Iodine has such an affinity for some tissues as to stimulate some and destroy others, according to the amount of vigor they possess; the sick being killed and the weak being restored.

Question. Has not the liquid part of the oxychloride of zinc the same action as the creasote?

Dr. Atkinson had never known a case of even a similar action; identity of result is an impossibility, because each exerts its own specific function according to its nature. That they each coagulate albumen is certain.

Dr. Wetherbee. Is it not true that if the oxychloride of zinc is used, without any excess of the fluid, the same result may be obtained without creasote as with it?

Dr. Atkinson. That depends upon the temperament; in a low organization such a result might be attained. I always use creasote with it.

Dr. Wetherbee, when he finds an exposed pulp which has not bled, applies the oxychloride directly to it, only using creasote when the pulp is exposed and bled by the instrument (as will sometimes happen even to the most skilful operator), and that merely as an astringent.

gent. If the chloride of zinc, in coming in contact with the pulp, produces the same result as the creasote, why should the latter be used, unless it is a preventive of pain? Is it true that the occurrence of pain endangers the life of the pulp? He believed not; and whether he applied the creasote or the oxychloride directly to the pulp, there was commonly a twinge of pain, which soon passed away, and was followed by no ill results. In those families which had been long under his charge, and where the teeth were inspected at regular intervals, he did not have occasion to perform any operations of this character; they were confined in the main to new patients. During the past year he had found no case of death of a pulp treated by him in the manner described. When he first commenced this method, it was with hesitancy and misgiving; but it proved so satisfactory that he had gone on, and now believes that, whatever the pathological conditions, they can be conquered. And here comes a wail from some one who has been unsuccessful; but he would say to that man, The fault is your own. He accounted this unsucccess by supposing that the mixture was too hard when applied to the pulp, or that the cap had been broken in inserting the gold filling. Such failures should not be charged upon the material which proved so successful in abler hands.

Dr. Buckingham said he had tried to follow out all the directions given with the greatest care, but had not had uniform results. No surgeon could prognosticate how any case would turn out, no more could any dentist. He took exceptions to Dr. Atkinson's view of the condition of the pulp as acted upon by creasote. After sloughing and the application of creasote, there must be a cicatrix formed; the pulp must have a natural covering; it cannot tolerate the presence of a foreign substance without some degree of inflammation, which was likely at any time to be waked up into an active state.

Dr. Atkinson said there was no cicatrix; merely a new coagulum was formed; a pellicle, taking the place of the natural covering, dentine.

Dr. Buckingham. You cannot form a coagulum which will not allow fluids to pass through it; even if it were as thick as leather, fluids would pass through it. In this way he had lost a number of cases, and therefore could not report uniform success.

Dr. Wetherbee. Suppose there is an exudation from the pulp, is there no provision for taking it up? The oxychloride of zinc is porous; the best ever made will absorb moisture, and for that reason

it is the best material for capping tooth pulps. It will absorb *liquor sanguinis*., or anything else, from the pulp, which comes in contact with it. It is sufficiently normal to ensure success ; and he believed 100 per cent. of cases would succeed if the cap were not broken.

Question. Do you admit that if there is partial suppuration the rest of the pulp may have recuperative power ?

Dr. Wetherbee had never seen such a thing, and did not believe in it. There are three classes of exposed pulps which he believed amenable to treatment. The first, where there is simple exposure ; to these he applies the oxychloride, pure and simple. The second, where the pulp is exposed and wounded so as to bleed, here he applies creasote as an astringent and hæmostatic, followed by the oxychloride. The third, where the pulp is congested and has given considerable pain ; here he would use means to reduce the congestion, and then fill as before, with confidence of success.

Dr. Butler. Do you still think that it is injurious to the pulp to fill the whole of a large cavity with the oxychloride ?

Dr. Wetherbee, in reply, mentioned a case which had come under his care, where, the pulps being exposed, a former operator had filled the cavities entirely with oxychloride, and these fillings had been renewed at times for three years ; when he (Dr. W.) examined them the pulps were found all dead, and he attributed this to the continued action of an excess of the hydrochlorate.

Dr. Butler thought Dr. Wetherbee's position questionable. How could it be known just how much of the material to use, if such different results followed ? He had used the oxychloride both as a cap and for an entire filling, and had found it to serve equally well.

Dr. Pearce said he must confess himself one of those who were weak and wicked enough to destroy pulps. Experience had shown him that the treatment which had been detailed was not reliable. On several occasions he had found, on cutting into teeth which had been filled in this manner, that the pulps were dead ; while in other cases they were alive. He had not seen much to give him more confidence in the process of capping with oxychloride than with anything else. The theory of capping pulps, carried out with various modifications of material, had been extensively experimented upon for many years past, but the success had never come up to the expectations raised. With this state of feeling on his part, he generally transferred operations of this character, which showed indications of

possible success, to his associate, who had more faith in them than he had.

Dr. Bogue thought cutting into teeth to test their vitality mere boy's play. A spicule of ice applied to the tooth was always a satisfactory test of its condition. Where suppuration of the pulp had far advanced, he did not believe it was amenable to treatment. He kept exceedingly careful records of every case of pulp exposure treated by him, and had not lost one case of a healthy pulp, using the same means as described by the previous speakers. He had not yet learned how to arrest inflammatory action in the pulp, and would gladly receive instruction on that point from any one who was capable of imparting it.

Dr. McClelland believed erroneous views were entertained concerning the therapeutic action of the oxychloride of zinc. With a healthy pulp, its therapeutic properties amount to nothing; its only value was in its adaptability; gutta-percha would be just as useful, if it were as easy of manipulation.

(To be continued.)

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#### ODONTOLOGICAL SOCIETY OF GREAT BRITAIN.

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General monthly meeting, February 1st, 1869.

Henry John Barrett, Esq., President, in the Chair.

The minutes of the last meeting were read and approved.

Mr. Francis George Bridgman, 12, Queen Anne Street, Cavendish Square, was elected a member.

Mr. Bevan Fox, Exeter, was proposed for election.

Mr. F. J. Vanderpant signed the obligation-book, and was admitted a member of the Society.

The new President then delivered his inaugural address. He said—

Whatever doubt he might have of his own competence to fill the office to which he had been elected, he had none as to the efficiency of the officers elected to assist him; and therefore, he had only now to seek the aid of the members who were the real supporters of the Society.

He thought that, notwithstanding the valuable papers already supplied by members, they were far from having exhausted the field of their labours; and he called upon the younger members, especially, to devote their attention to the investigation of some one point in

reference to Dental disease and treatment, quoting from a writer of eminence, who said, "That man occupies the highest pinnacle in our profession, and marches in the *first rank*, who is the most intimately acquainted with morbid action, its causes, its history, the tissue-changes resulting from it, and its treatment." When the already published views of others are confined by experiment or accurately reported cases, or when original views are arrived at through the study of new facts and analytical inquiry, the Society would cordially welcome their communication.

The President then pointed out the great value of discussions on practical subjects, which would elicit from the seniors of the profession the results of the teaching of experience and a knowledge which could not be acquired from books, but only from years of observation.

He offered his warm thanks to the late President, Mr. Ibbetson, for his judicious selection of a subject, viz. "The Histological Structure of the Human Teeth," for the best essay on which he had offered a gold medal as a prize.

The President closed his address with some brief remarks on the valuable 'Transactions' of the Society and on the advantages offered by the Dental Hospital.

The following presentations were then announced :

Mr. King, of Newark, exhibited a model and two temporary incisors, with a supernumerary tooth united to each laterally.

Mr. Vasey, Mr. Rymer, the President, and Mr. Charles James Fox, related similar cases.

Mr. Sewill inquired if the committee on nitrous oxide had determined whether engorgement of the lungs with blood took place during the administration of the gas ; if so, whether it was sufficient to be a source of danger in diseased conditions of the lungs—for instance, in phthisis.

Mr. Coleman said that in lower animals the lungs did not appear unduly engorged, but the blood, and therefore the appearance of the lungs, was darker ; both sides of the heart were distended with blood, proving that there was no impediment to pulmonary circulation. The gas had been given without unpleasant results to patients suffering from disease of the lungs. Of course, great caution must be exercised in such cases.

Mr. Sercombe related the case of an epileptic patient, aged twenty-one, who, on taking the gas, was insensible in seventy seconds ; the return to consciousness was somewhat slower than usual,

taking two minutes thirty seconds, but the patient exhibited no convulsive movements. In another case a lady had been kept under the influence of the gas for an hour, never being properly sensible during that time; she inhaled fifty gallons; no ill results followed. The gas was administered six consecutive times in the hour.

Mr. Cattlin confirmed Mr. Coleman's statements.

Mr. Coleman mentioned the case of a patient considered unfit for chloroform, but who had twenty-six teeth removed during thirteen inhalations at five visits.

Mr. Versey recommended the perusal of Sir Humphrey Davy's work on nitrous oxide.

Mr. Charles James Fox exhibited and described Mr. Ash's regulator for controlling the heat in the manufacture of nitrous oxide. Although he professed himself in favor of Sprague's regulator, he spoke warmly in favor of the ingenuity and compactness of this invention of Mr. Ash.

Mr. Sercombe exhibited an oxycalcium lamp made by Orchard, of Kensington, which throws a jet of light like sunlight into the mouth, and allows of teeth being stopped in any part of the mouth.

Mr. Sewill then read a paper on "The Comparative Value of the Materials used in taking Impressions of the Mouth," of which the following is an abstract:

After observing that his object was rather to excite discussion than to prepare an elaborate paper, he suggested that it would be well if an abstract of each paper should be sent to every member of the Society prior to the meeting, so that anyone might be prepared to support or combat the views advanced.

With regard to the subject under discussion it might be found that no material was universally applicable, and it was not the least important point to assign to each substance the peculiar advantages which it possesses over others.

With regard to wax, should it be softened by dry or by wet heat? At what degree of softness is it most efficiently applied? Should the impression be withdrawn speedily, or should it be allowed to remain until the wax has arrived at the hardest condition which the temperature of the mouth will allow it to assume? Is it good practice to oil the surface? What are the most effectual means of preventing sucking and dragging.

For his own part he considered it practically impossible to obtain, in any number of cases, a perfect impression of the mouth in wax.

The use of gutta percha was first mentioned by Mr. Sercombe in the second volume of the 'Transactions.' It was much used at first but has been, to a great extent, abandoned; it took long to harden and shrank in the process. The models obtained in this way had the appearance of being very perfect; there was no sucking, no dragging, under cuts were well shown, but these appearances were deceptive; a true portrait of the mouth was not shown,

But if the best kind, viz., the common unprepared block gutta percha of the shops was used, it would prove a useful adjunct in taking impressions, softening more rapidly and completely, remaining soft at a lower temperature, and giving a smoother surface than the pink preparation.

He advocated the use of a special tray for each case struck up in zinc, from moulds obtained in the first instance from an ordinary wax model. The tray should cover only those parts where a plate is to rest. The gutta percha takes ten minutes to harden, and the pressure may be kept up by the patient biting on the tray, a piece of wood being interposed to equalize the pressure; in this way a good model can be obtained.

Stent's composition was a good material; it did not contract or become sucked if left long enough. Of plaster of Paris, the best is to be obtained at Robson's, Mount Pleasant, Gray's Inn Road; should be mixed with water warmed to  $80^{\circ}$ , with a little salt; ordinary trays suffice. Should not be used when thin enough to run from the tray, but still it must be soft enough to require slight pressure in taking impression. In the upper, press the plaster first against hard palate, then press upwards and forwards, so as to avoid air being confined and a "blow" resulting. The patient should sit upright and the saliva allowed to flow into a hand spittoon. In the lower the weight of the tray alone is sufficient pressure. A little practice soon enables one to note the best time of removal. By the use of a special tray not covering the external surfaces of the teeth which are not to be worked to, we can avoid too much locking or breaking up of the impression into many parts. He advised leaving the plaster in the mouth about two minutes. After removal from the mouth collect the broken pieces and fit them into their places. In casting such impressions it is best to wash them over with a solution of soft soap. The cast should not be removed entire, but piece-meal with a blunt knife. When a gold plate with clasps is to be made, strike up your plate to the model. Place it in the mouth and

take an impression of the whole in wax from this, with the plate embedded. A cast must be made, and the bands can be adjusted in the usual way. Plaster can be used in nearly all cases; exceptions of course occur, as, for instance, where patients are intolerant of prolonged manipulations; but when used there is no sucking or dragging. The most delicate folds of mucous membrane remain undisplaced. Finally, he valued the different materials as follows: first plaster, then Stent's gutta-percha, and lastly wax.

The President believed that each one would praise the material he most generally used. In edentulous cases plaster of Paris was excellent, but wax was most successful when many teeth were left, or even undercut. In using wax, much depended on its quality and the mode of softening it. Judging from the models exhibited, he did not see that gutta-percha was so superior.

Mr. Ramsey spoke warmly in favour of plaster of Paris; when removed at the proper time, it broke in such a manner that it could be perfectly reunited, and drags would thereby be prevented.

Mr. Vasey used a solution of alum to expedite the setting of plaster of Paris. In undercut cases he placed wax round the undercut teeth, and was thus able to withdraw the plaster readily from the mouth.

Mr. Turner found that, in using Stent's composition, he sometimes got the teeth puffy in shape, which he could not account for.

Mr. West corroborated this statement.

Mr. Moore, of Plymouth, thought pure wax the best material.

The President said puffing took place occasionally when wax was used.

Mr. Walker kept wax in the mouth two and a half minutes; did not rely on gutta-percha; plaster of Paris was the best material, but it was difficult to use in lower cases. The difficulty was to judge of the exact moment for introducing the plaster of Paris.

Mr. Ramsay said the proper moment was when the tray could be turned over without the plaster dropping.

Mr. Sercombe thought they were much indebted to Mr. Sewill for bringing this subject forward. He believed plaster could be used in all cases with rare exceptions, but skill was needed. He thought it very desirable that undercuts should be fully represented on the model, and the work fitted to them, as there should be as little space as possible between the work and the teeth, to prevent the lodgment of food. Mr. Sewill's models showed the accuracy of plaster; the

great point was to make the operation as little irksome to the patient as possible. He simply required them to lean forwards over a basin, so that any loose plaster fell there, instead of into the throat. Salt was more pleasant to the patient than alum.

Mr. Ramsay said special trays were not needed for plaster—he used the ordinary trays—the great point was to know the proper time to introduce it into the mouth.

Mr. Charles James Fox said they were under obligations to Mr. Sewill, not only for the paper, but for the promptness with which he had prepared it at short notice; he especially alluded to the simple practical character of the paper, Mr. Sewill not deeming it essential that he should confine himself to some of the higher branches of Dental science, though few were more competent to treat of them. He referred with regret to the beautiful gutta-percha originally supplied by Dr. Putnam, as compared with that now supplied by the depots. He retained the gutta-percha in the mouth about four minutes, using special vulcanite trays for nearly every case, and dusting the surface of the gutta-percha and the patient's lips with a little French chalk. The removal of an upper piece was facilitated by directing the patient to utter the sound ha! in a loud whisper, thereby raising the soft palate and admitting the air. He should be a warm advocate for plaster models, but found difficulty in uniformly obtaining a quick-setting plaster.

Mr. Sewill, in reply, thought, judging from the discussion, that wax as a modelling agent would soon become obsolete. Work fitted to wax models gave much subsequent trouble to the patient and operator. Mr. Tomes, he understood, had entirely abandoned wax, using plaster or Stent's.

The President said that Dr. Marcus Roeder, of Odessa, who was present, had intended relating the particulars of an interesting case, but, owing to the lateness of the hour, would kindly defer it to another occasion.

The thanks of the Society having been accorded to Mr. Sewill for his paper, and to Messrs. Sercombe, King, Vasey, Fox, and Roeder, for their respective communications and presentations, the Society adjourned.—*British Journal of Dental Science.*

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## SELECTED ARTICLES.

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### INOCULATION.

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BY J. S. LATIMER, D. D. S., NEW YORK CITY.

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In a former communication, I spoke of the danger of inoculating

one patient with the diseases of another, and besought dentists to practice great caution, taking care that each instrument which might possibly be contaminated with blood or pus should be thoroughly cleansed after using.

Recently, very painful illustration of the effects of inoculation has come to my notice, and I deem it advisable to lay the facts, as I understand them, before the readers of the DENTAL COSMOS, that they may be on their guard.

A dentist (who also practiced medicine), resident in a small town in the State of New York, in operating for a patient suffering from a syphilitic difficulty, contracted the disease from absorption of the virus at a point on one of his fingers where the skin was broken by a hangnail.

Not at first recognizing the disease and being exceedingly careless with reference to his own health, he employed no appropriate remedies, and was soon unable to continue his practice. The disease progressed rapidly until, at the last accounts, he had suffered paralysis of one-half his body and was likely to speedily "go the way of all the earth."

This is a case of great calamity, resulting from the neglect of a "little thing"—the hangnail on a finger.

The late Dr. John Miller, of our city, had seen the evil results of such accidental transfers of disease, and was so alive to the danger and commonness of it in medical practice, especially in vaccination, that he frequently cautioned the members of the medical association with which he was connected. It was almost a hobby with him. Of course he was exceedingly careful—but he was human. On one occasion he failed to get his lancet thoroughly cleansed after using. His son (then a lad, but now a practicing physician, and from whom I received these facts) was suffering from inflammation of one of his eyelids, and that lancet was employed on it. The result was that the young man came near losing his eye.

Cases might be recounted in convincing numbers, if it were necessary; but that is needless. The theory is generally admitted, and it is only necessary to call attention to the matter occasionally to make the profession more vigilant and cautious. Forceps, lancets, files, scalers, etc., should be thoroughly cleansed with water after using.

If the skin of a dentist's finger becomes broken, it should be covered with a film of collodion or caoutchouc. The "india-rubber" dissolved in bisulphide of carbon answers well for this purpose.

Of course no dentist would think of operating in the mouth while he himself is suffering from a venereal disease. To do so would be criminal.—*Dental Cosmos*.

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### CALCIFIED PULP OF A SUPERIOR MOLAR.

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BY JAMES B. HODGKIN, D. D. S., ALEXANDRIA, VA.

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In this case the patient, a lady, called with the left superior second molar aching, and so very sensitive, as to permit but little handling. The tooth had lost its antagonist, and had descended considerably below its fellows in the arch. The crown of the third molar lay against the posterior approximal surface of the affected tooth where the decay was situated so as almost completely to hide the cavity. The patient was very nervous from long suffering. The cavity was cleansed as thoroughly as possible, and Welch's nerve paste applied, covered and secured by a pellet of cotton saturated with sandarac varnish, and the patient was requested to call again the next day. On her reappearance the sensitiveness and pain had much abated, but on attempting to excavate the cavity, some considerable uneasiness was manifested, and as the pulp did not appear to be devitalized, a second application of the nerve paste was decided on.

There seemed in the cavity some obstacle in the way of its ready entrance, the nature of which it was difficult to discover from the unfavorable location, as described. The application made as determined on, the patient was dismissed with instructions to call the following day. She failed to make her appearance however, at the appointed hour, and nothing was heard from the case until about ten days after she entered the office stating that she had been hindered from calling sooner on account of sickness. Pain had impelled her to seek relief, and as the tooth was found on examination to be in a bad condition,—acute periostitis with considerable inflammation of the surrounding parts,—it was resolved to yield to her request, and extraction was resorted to. On breaking open the offending organ the cause of the difficulty in the way of a free entrance into the cavity was made manifest. The entire pulp, with the exception of a small investing membrane was calcified. The adherent portion or point from which the growth proceeded, was at the top of the pulp cavity, opposite the bifurcation of the roots. The uncalcified portion of the pulp very nearly completely invested the adventitious growth, and

did not much exceed in thickness a sheet of ordinary letter paper. The case is sufficiently unique to excite curiosity.—*Am. Jour. Den. Science.*

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### THE INHALATION OF CARBONIC ACID

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The old idea, that carbonic acid is in itself a *poison*, still prevails to a considerable extent, even among well-informed people. Carbonic acid exerts no more corrosive or poisonous influence upon the system than water. Water deprives persons of life, when they are immersed in it, by excluding oxygen from the respiratory organs; and this is why fatal effects are obtained from carbonic acid. Carbonic oxide (CO), when inhaled, is poisonous; it acts upon tissues, produces chemical changes in the blood, and arrests respiration. Not so carbonic acid: we can *drown* in it; but it is in no sense a *poison*. From laboratory experiments in inhaling carbonic acid, we are led to think that possibly it may be found to possess valuable therapeutic properties, when its nature is fully understood. The asphyxia which it produces, although apparently painful and injurious, or attended with fatal consequences, is probably not so. A technical laboratory may be said to be never free from the gas; and the only influence it exerts upon workmen is of a somnolent nature. Breathed in small quantities, mixed with air, it causes a sleepy feeling, unattended with headache. In the manufacture of nitrate of ammonia from the carbonate in a large way, vast quantities of the gas are liberated; and we have seen mice, in attempting to run across the laboratory floor, tumble over, and remain asphyxiated for a long time, and then, upon a subsidence of the flow of gas, recover, and scamper away as if nothing had happened. The dog, which so many of our readers have seen thrust into the celebrated cave, *Grotto del Cane*, near Naples, evidently suffers but very little; and, although made perfectly insensible many times in a day, is not apparently injured in health. These examples, when taken in connection with other significant facts, incline us to think that a series of carefully conducted experiments in the employment of certain quantities of carbonic acid, diluted with air, may lead to the discovery of a peculiar anæsthetic, or sleep-producing agent, of a simple and desirable nature. If the pressure of exacting duties permits, we intend to institute a series of experiments of the nature indicated, at no distant day; and our readers will know of the results.—*Boston Journal of Chemistry.*

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CORRESPONDENCE

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CHATHAM, NOV. 12TH, 1869

*Mr. Editor*:—A meeting of the Dental profession in the western portion of the Province of Ontario, was held at the office of Dr. Stone, in the city of London, on the evening of the 10th inst.

Dr. Stone having been called to the Chair, and Charles P. Lennox appointed Secretary *pro tem*, the meeting was opened and the following resolutions adopted.

*Resolved*, That we form ourselves into a Society, which shall be known as the Western District Dental Association, and shall embrace all that part of the Province of Ontario lying west from the city of Hamilton.

*Resolved*, That the object of this Society shall be to promote professional and social intercourse among those legally engaged in the practice of dental surgery in Canada, to advance the cause of dental education, and by a mutual interchange of ideas and experience, to liberalize our relations with each other.

*Resolved*, That this Society shall consist of all those legally practicing the profession of dental surgery in said western district, who shall subscribe to the articles and rules of this Society, and pay into the hands of the Treasurer the sum of fifty cents.

*Resolved*, That the officers of this Society shall be a Chairman, Secretary, and Treasurer; all of whom shall hold office for one year.

*Resolved*, That whoever shall cause to be convicted any person illegally practicing dentistry in said district shall be entitled to a reward of five dollars *for each* conviction, which reward shall be independent of all other fees or rewards, and shall be paid from the funds of this Society.

The election of officers being taken up, resulted in Dr. Stone, Chairman; Chas. P. Lennox, Secretary; and A. Burns, of St. Thomas, Treasurer.

A list of fees was adopted, and subscribed to by all present.

The Society then adjourned, to meet again on the 2nd Wednesday in March next.

I cannot close this report without a word in behalf of Dr. Stone's excellent lady, who, true to feminine forethought, was ready at the close of the meeting with Mocha steaming hot, and other dainties wherewith to make glad the heart of man, and glad were our hearts,

for more delicious coffee never tickled the palate of man. After this we were treated to that, which cheers the heart in its saddest hours, which for the time being shuts out the trials, troubles, and bitter mockeries of the every day life, and transports us, as it were, into the happy realms of dream land. I mean music, sweet music, which seemed to trickle from the fingers ends of Miss Stone, as if a master hand touched the piano keys. The question which muddled my brain upon this occasion was: Why some men can live the lives of old bachelors, and by so doing loose the brightest half of life? I can't solve the matter, but would say to those naughty old bachelors who want to learn a lesson of happiness, spend an evening at Dr. Stone's.

Yours &c.

CHAS. P. LENNOX.

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*Mr. Editor:*—At a meeting of the dentists of the city of Hamilton, held in Mr. Chittenden's office, on Monday evening, the 15th instant, it was

*Resolved*, 1st. That we form ourselves into an Association to be called the "Hamilton District Dental Society," and that the following gentlemen be appointed officers, viz: Mr. T. Le P. Filgiano, President; Mr. J. Bowes, Secretary; and Mr. D. A. Bogart, Treasurer.

2nd. That our meetings be held on the third Monday of each month.

3rd. That we extend a cordial invitation, through the Secretary, to all the dentists of Hamilton District to unite with us.

4th. That each member present prepare a schedule of fees to be presented at the next meeting, from which a fee bill may be drafted for the Society.

5th. That the action of the dentists of the London District in extending their boundaries so far east as the city of Hamilton, is an act of aggression, not to be tolerated without at least a show of opposition, and that we pledge ourselves, individually and collectively, to make the meetings of our Society so very interesting and profitable, that our brethren to the west of us, will secede from them and join our Society.

The next meeting will be held on the evening of the third Monday of December.

It is sincerely hoped that all the dentists of Hamilton District will heartily unite with the Society, and that each will contribute his mite to the common stock of knowledge, and thus make the Association a means of improvement to all. It is by the free inter-

change of ideas respecting our various modes of practice, by comparing notes with each other, by recounting our failures and our successes that progress is made. And while we endeavour to profit by some brother's failure, and strive to shun the rock upon which he split, we, on the other hand, emulate the success of another, and thus reach a higher degree of excellence in our operations than we would without the healthy stimulant afforded by interchange of thought.

We have a striking instance of the value of associated effort in the position of dentistry in Ontario to-day, compared with what it was four or five years ago. That rapid strides of progress have been made in that time who can doubt. That the progress made is mainly attributable to our Dental Society is equally true.

It is cause for congratulation that local Societies are springing up in other parts of Ontario, and while wishing them every success, we hope that the Hamilton District Dental Society may long be a power for good.

J. BOWES,  
Secretary.

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## EDITORIAL.

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A TREATISE ON THE DISEASES AND SURGERY OF THE MOUTH, JAWS, AND ASSOCIATE PARTS.—By James E. Garretson, M.D., D.D.S., *Late Lecturer on Anatomy and Surgery in the Philadelphia School of Anatomy, &c., &c.* Illustrated with Steel Plates and Wood Cuts. Philadelphia: J. B. Lippincott & Co., 1869. 700 pages; price \$7.50.

To those who love a scientific profession in which they are engaged, and who appreciate it as more than a mere mechanical calling, the appearance of such a work as the above, should be hailed with even more delight than the lover of fiction, welcomes a new novel. Apart from the stimulus of clinical observation and actual practice, there is no greater mental delight than thumbing the pages, and attentively digesting the contents of such a new work, especially if it has the recommendation of being written by one who has made his name known as a student of deep research and mature reflection.

In this treatise, the author has undertaken to acquaint his readers with many oral diseases and surgery not exactly within the province of the dentist, but upon which every dentist should be well informed. The objects of such works as the one under review, are in the highest

respect commendable, and deserve the countenance of every practitioner. We fully appreciate the importance of educating the dentist up to the standard of medicine and surgery, and of laying a good foundation of anatomy, physiology, pathology and chemistry; yet we fear the tendency is to regard such diseases as are included in those of the antrum of Highmore, some cases of necrosis, all cases of neuralgia, ulcers &c., as requiring a superficial knowledge, and properly within the sphere of any one calling himself a dentist. While there are many dentists in Europe and America who have no superiors as oral surgeons, and some who have led the way in discoveries and improvements designed to mitigate suffering, and restore the wreck of the human face divine, we know there are a large majority who confine themselves exclusively to the teeth, and who have the honesty—perhaps timidity—not to rush in where experienced surgeons fear to tread. That there are some, on the other hand, who with no knowledge at all, or very imperfect knowledge of the nature, causes and treatment of special diseases of the mouth and adjacent structures, aim to treat these diseases, and do treat them with the same *sang froid* and audacity as an ulcerated root of a tooth, or an exposed nerve, is a fact known to the cost of many a poor victim.

There is every reason why such studies, and even such practice, should be within the sphere of the dental surgeon, but there is also every reason why they should be thoroughly studied, and that an educational ground-work above the laboratory or the operating chair, should be had before attempting to meddle with special diseases of the mouth, apart from those of the teeth. The only fault we find with such works as this of Dr. Garretson's, is that they so simplify and render attractive theory, that many unqualified are tempted, after perusing such works, to come out, with the receipts they have copied, and the few facts they can remember, as fully-fledged oral surgeons. We are intensely averse to dentists undertaking the treatment of such diseases without a sound medical education; though we are just as intensely anxious to see the day when oral diseases and surgery may be the sphere and specialty of the dental surgeon. As a guide to such a consummation, Dr. Garretson's work is invaluable.

We would like to have made extracts, and to have discussed some points with which we do not agree, and to have commended a great deal by which we have been instructed, but our narrow limits will not admit of such an extensive review. We can only say that as a

text book it is invaluable, and should be introduced into every college, as well as into every dentist's private library. The contents consist of 42 chapters, 120 wood cuts and thirteen plates.

W. G. B.

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#### LOCAL DENTAL ASSOCIATIONS.

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When the Committee appointed last January, to draw up a Constitution to be submitted to the Belleville meeting in July, made their report, they suggested the propriety of making the meetings of the Society *annual* instead of semi-annual, and that local Associations should be formed to take the place of the semi-annual meetings of the parent Society.

There can be no doubt that the idea is a good one, and if properly carried out would be the means of advancing the interests of the profession to as great an extent as Societies covering a much larger amount of territory. Men living at considerable distances from each other will meet and discuss matters pertaining to their interests without the least restraint, while those residing in the same neighborhood seem to feel that they must button up their very coats when they meet lest one shall gain some possible advantage over the other. It is true that this feeling does not prevail to the same extent that it did a few years ago, but there is too much of it to be met with still. It was for the purpose of doing away with this local jealousy, or whatever it may be called, that the Committee reported, and the Society at Belleville adopted, the resolutions in favor of Local Societies. We are happy to see that some results are following that movement. The dentists of the eastern part of the Province took the lead in the matter and held a meeting at Napanee, of which we gave a short report in the September number of the *Journal*. In this number we publish a letter from Mr. C. P. Lennox, the Secretary of a Society formed recently at London; also one from Mr. J. Bowes, giving a synopsis of the proceedings of a Society formed for the Hamilton District. We hope soon to hear of similar action being taken by the Toronto dentists.

C. S. C.

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CORRECTION.—In the report of the meeting of the Quebec Board of Examiners, in the last number, page 79, the following names were omitted from the list of Examiners: W. Geo. Beers, Dental Pathology; H. Ross, Irregularities and Anomalies; J. McKee, Dental Surgery; M. Pourtier, Dental Hygiene.

Mr. Frank Soper, of Prescott, says: "A small quantity of glycerine applied to the mouth-glass enables the operator to examine a cavity without being interrupted by the patients breath."

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**DENTAL TEXT-BOOKS.**—Three or four times recently we have been asked what books are required for the use of students, and as we may be asked again by others, we take this means of replying to all. The following is the list of books which the Board prescribed a year ago, viz: Gray's Anatomy, Dalton's or Carpenters Physiology, Fowne's Chemistry, Harris' Principles and Practice of Dental Surgery, and Taft's Operative Dentistry. Now that the college is open other books will be required, among which, we think will be Bond's Dental Medicine, Piggott's Dental Chemistry, and Garretson's Diseases and Surgery of the Mouth, Jaws and Associate Parts.

Since writing the above we have received a letter from C. H. Hubbard Esq., saying that he has just received a fresh supply of all the books mentioned above.

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**GIVING UP PRACTICE.**—We call the attention of our readers to the advertisement of Mr. Chas. Kahn, of Stratford, who, on account of his late bereavement, is giving up the practice of his profession. Stratford is a thriving town, lying at the junction of the Buffalo and Lake Huron and Grand Trunk Railways, and is the centre of a fine farming country, and therefore is a very desirable location.

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## DENTAL SURGEONS OF ONTARIO.

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*Meeting, Thursday, Nov. 18th, 1869.*

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### OPENING OF A COLLEGE DENTAL INFIRMARY FOR THE POOR.

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A meeting of the operative portion of the faculty of the Royal College of Dental Surgeons of Ontario was held in the College rooms, Church street, (over the British American Insurance Company's office) yesterday afternoon. In the absence of the president, Mr. Callender was called to the chair, on motion of the Secretary, Mr. O'Donnell, seconded by Mr. Myers.

#### CHAIRMAN'S ADDRESS.

The Chairman read an address stating that the object of the present meeting was to open a college for the instruction of persons who

had undertaken the study of dentistry, and particularly urged the students to give their whole time and attention to the knowledge imparted. He further stated that the professors had, at the urgent solicitation of the Board, accepted the chairs assigned to them at a great personal sacrifice, having left large practices to come here to discharge a public duty. He dwelt at considerable length on the importance of a thorough dental education, in order that the profession may keep pace with the progress and advancement of the science of the age.

#### HOURS OF LECTURES.

Mr. O'Donnell announced the hours of lectures in the dental branch, and stated that they had been so arranged as not to interfere with the lectures in the medical department of Victoria University. He had fully expected the presence of the President at the opening, and regretted his absence. He had written to him some time ago, suggesting the advisability of his delivering the introductory lecture. He had not heard directly of the cause of absence, but from information casually received had concluded it was on account of a change in his domestic relations. He hoped, now that the college was opened, each person would perform his duty, in order that the results would be a credit to those concerned as well as the profession of this province, and an honor to the public at large.

#### DENTAL INFIRMARY FOR THE POOR.

Mr. O'Donnell moved, seconded by Mr. Trotter, "That this faculty open a dental infirmary at the college rooms for the purpose of performing operations in operative and surgical dentistry for the poor of the city, and that it be open for such purpose daily from 9:30 a.m. to 10:30 a.m., free of charge."—Carried.

#### LIBRARY.

It was then resolved that the faculty, having in view the establishment of a library and museum, respectfully solicit contributions to the same from medical men, dentists and others, and that anything to further the object in view forwarded to the Secretary, will be thankfully received.

#### LECTURES.

The first lecture of the course will commence at 9:30 a. m. to-morrow. There will be two lectures in the operative part each day except Saturday, which will be devoted to clinics.

The meeting then adjourned.

THE  
CANADA JOURNAL  
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Vol. II.]

DECEMBER, 1869.

[No. 5.

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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BLACK RUBBER.

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BY C. S. CHITTENDEN.

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For the last five months I have been using quite extensively, black rubber as a base for artificial sets of teeth, in place of the red gum. I adopted it because, after one or two trials, I found it to be very much stronger than red, and can, therefore, be made only about one-half the thickness which it is necessary to make plates of the rubber now in common use. It is susceptible of as fine, if not a finer polish than the red gum, and when neatly manipulated, it makes a very beautiful denture.

The objection so often urged against red rubber, viz: that the coloring matter—the sulphuret of mercury—has a deleterious effect upon the mucous membrane of some mouths, if it has any foundation at all, in fact, which I very much doubt, is entirely overcome by using the black gum, as it contains nothing but the pure caoutchouc and the sulphur which causes it to harden by steam. It is cheaper, too, for there being no heavy mineral coloring matter in it, it takes a much larger quantity to make a pound. It hardens at a little higher heat than red gum.

## ANÆSTHESIA, ITS EFFECTS ON THE BLOOD.

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BY B. T. WHITNEY, M. D., D. D. S.,

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*Read before the 7th and 8th Districts Dental Society, Buffalo  
October 7th, 1869.*

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*Mr. President and Gentlemen:*—In looking over this subject I find it impossible to condense within reasonable limits of a paper to be read before this Society, all that I might say on anæsthesia. I shall therefore speak more particularly of the influence of the several anæsthetics on the blood, and through it on the general system; presuming that that of more immediate practical importance will be fully brought out in the discussion that will follow.

To properly explain or comprehend the physico-chemical phenomena of anæsthetics, it may be well, first, to very briefly look at the component parts and uses of the blood; how its life principle is sustained; its relation to the nerve centres; the composition and chemical properties of the anæsthetics in general use; their immediate effects on the blood, and through it on the system. In doing this I shall draw largely from the experiments of others, and condense some important portions to mere statistics.

The blood is composed of serum, fibrin, coloring matter, and a small proportion of saline compounds. The serum is composed of about nine parts water, nearly one part albumin, and the remainder of salts of potassa and soda. The fibrin is the soft solids, and is formed in minute nuclei, which are surrounded or encased with coloring matter, which prevents them from adhering to each other as they are carried forward in the circulation, and is vitalized by the absorption of oxygen from the air we breath, as it passes through the lungs. It is these nuclei that we shall have most to do with. The coloring matter is subject to some speculation, but nearly all experimenters decide it to be some of the chemical combinations of iron, and is brightened in color by the oxygen in the lungs, making arterial blood; and is darkened, as in the veins, by its loss, and the absorption of carbon and effete matter carried from the absorbents, to be cast off in the form of carbonic acid gas and vapor as it returns to the lungs. With this change of color the nuclei becomes vivified.

The quantity of blood in the human body is not positively known, nor can it be; but the average of estimates place it at about one-fifth or one-sixth of the whole weight of the body. Neither is the vel-

ocity of the blood any better understood. It is estimated, however, that there may be one ounce thrown forward at each contraction of the ventricle. Thus, if there are 30 pounds in the body weighing 150, it would take 480 pulsations to send it forward. Allowing 72 pulsations per minute, there pass through the lungs 72 ounces of blood. There are 23 inhalations in a minute, which would expose about 3 ounces of blood to the air at each breath. By this calculation it would require about 160 breathings, or between six and seven minutes to aerate all the blood.

What this propelling power is, is still unsettled in the minds of physiologists. Some claim it to be an electro-galvanic or nervous fluid, unconsciously passing in a current. This theory is claimed to be sustained by the experiment of ligating or dividing the pneumogastric nerve, arresting the circulation of the blood as well as breathing, which may be restored by passing a current of galvanism through the severed parts. Others claim that it is the vivifying power of oxygen on the blood; while others with more show of reason, that it is from both, that there is a mutual dependence between nerve power and atmospheric stimulation. In the new born infant, there is no independent venous and arterial circulation set up until air is admitted into the lungs, when the blood is set in motion. In death the heart usually continues a feeble motion after the last breath, probably from the supply of oxygen retained in the blood. In suspended animation, our first effort is to get air into the lungs. As soon as this is accomplished the heart is put in motion, though it is an entirely involuntary action; unless we suppose that the air first acts on the nerve centres, and that they direct the heart to act. That the blood comes into the lungs *venous* and goes out *arterial* is a fixed fact, as is also that it gives off carbonic acid gas, and takes in oxygen. It is also demonstrated that oxygen is the cause of this change to vermilion in the color of the blood. It cannot be produced by any other substance. By no gaseous mixture, without free oxygen, can life be long sustained.

In every inspiration about half a cubic inch of oxygen is taken up, by about three ounces of blood (on the basis of the previous calculation). This would be nearly nine cubic feet per day. Atmospheric air is composed of about 20 parts of oxygen and 80 of azote or nitrogen. Thus, we consume each day about 45 cubic feet of air. The corpuscles alone absorb this oxygen, and the nuclei are vivified. *A priori* it would follow that the blood is, in a large degree, dependent

on *oxygen* for its vitality, if not entirely for its stimulant effect on the heart in keeping up the circulation. It is demonstrated that, without oxygen the corpuscles become somewhat disintegrated, the nuclei leave their coloring sacks and run together, forming a fiber or clot. Should this coagulation take place even to a very limited extent as the blood passes into the delicate membrane or pulmonary capillary system, or through the general capillary system, it must arrest the circulation.

The experiments on the influence of gasses or vapors on the blood, out of the body, give us but little information as to their effect by inhalation. Sir H. Davy and others could perceive little or no difference in the time or character of the coagulation, by exposure of fresh drawn blood "to azote, nitrous gas, oxygen, *nitrous oxide*, carbonic acid, hydrogen, or atmospheric air." Further experiments go to prove that vapor of chloroform or ether have little or no effect. But the *time* is materially influenced by *temperature*. At 98 ° it takes place in two and a-half minutes, at 120 ° in one minute, while at 60 ° it takes five minutes, and at 40 ° twenty minutes. Certain substances, when *mixed* with the blood, do effect its coagulation. Some retard or prevent it, like sulphate or muriate of soda or ammonia, nitrate of pottassa &c., while others will promote it, like alum, sulphate of zinc or copper, and some of the other mineral and vegetable astringents. The spray of perchloride of iron carried into the lungs with the breath will arrest hemorage of that organ. The air is capable of taking up most of the gasses and vapors, and the blood readily absorbs them. The temperature of the atmosphere will greatly influence the quantity thus taken up and conveyed to the blood. For example, at 40 ° it will take up but six per cent of chloroform, while at 60 °, nearly twelve per cent. From this fact we will see that temperature will greatly influence the quantity of chloroform or ether that may be carried into the lungs in any given time.

Water at 60 ° will absorb but four per cent of oxygen, while it may take up its own bulk of *nitrous oxide*. The blood will also take up its own bulk of the same gas, but only a small per cent of oxygen. The serum and corpuscles equally absorb nitrous oxide, while oxygen has no affinity for the serum, is entirely absorbed by the corpuscles. Nitrous oxide is taken into the lungs, is retained in the blood, and is exhaled as nitrous oxide with an admixture of carbon, as is also chloroform and ether, while oxygen is entirely consumed.

It has been claimed by many scientists, and even by experimenters that nitrous oxide when breathed, had the power of hyperoxygenation of the blood; drawing their conclusions from the fact that it is composed of one part each of oxygen and nitrogen; while atmospheric air is of the proportion of one of oxygen to four of nitrogen; and losing sight of another important fact, that it is a *chemical combination*, forming a new compound instead of a simple mechanical mixture, and that the blood possesses no power to decompose it. Recent experiments by Dr. E. Andrews, of Chicago, go to show that an admixture of pure oxygen with nitrous oxide will give continued vitality to the blood, while it will not detract from the anæsthetic quality of the gas; and thus make a prolonged anæsthesia comparatively safe. He uses one volume of oxygen to three of nitrous oxide.

After an ordinary expiration the lungs still retain a large volume of air, variously estimated—most writers say about 120 cubic inches. Lindenar estimates that there are 2642 superficial square feet, and 6,000,000 of air cells in the lungs. Each inspiration takes in about thirty cubic inches. It then will take four respirations to change the whole volume of air in the lungs. As we respire twenty-three times in a minute, this change will take place about six times. From these calculations, and the immense surface of cellular tissue, we can judge of the rapidity with which all anæsthetics may be brought to act on the blood, though it is not claimed that all the oxygen in the blood is disposed of in any case; if so, death would instantly ensue.

Nitrous oxide—protoxide of nitrogen—is of equal parts of oxygen and nitrogen (N.O.), is produced by the decomposition of the salts of nitrate of ammonia by heat at about  $400^{\circ}$ . Its specific gravity is nearly one and a-half. At zero, under pressure of  $30^{\circ}$  atmospheric (540 lbs.), it is condensed into a clear liquid, and at  $125^{\circ}$  below zero it is crystalized into a clear transparent body. The liquid would be a convenient form for keeping it for any length of time, or of transporting, as is recommended by Dr. Evans, of Paris. It is reduced thus about 400 times in bulk; a pint bottle will hold enough to make fifty gallons of gas. The bursting force on the bottle would be 750 pounds to the inch.

Nitrous oxide was first discovered by Sir H. Davy, in 1799, who also demonstrated its anæsthetic properties by inhalation. From that time it was only used as a matter of amusement, until 1843, when Dr. Horace Wells, of Hartford, conceived the idea, and demonstrated upon himself, that it might be of great benefit in mitigating

pain in surgical operations. Like all the other anæsthetics, it first acts as a stimulant, but when its administration is carried farther it induces narcotism. The livid hue of the countenance, lips, &c., almost leaden, often seen under its use, more decidedly so than by that of any of the other anæsthetics, is produced by the absence of oxygen, giving the dark color to the blood; as it is almost entirely cut off in the administration of the gas.

By careful measurement when there has been five or six gallons of nitrous oxide gas inhaled, there is only about three quarts retained in full anæsthesia.

Chloroform—Trichloride of Formyl—is usually produced from distillation of alcohol and chloride of lime in a closed retort. The vapor condensing is drawn off into water. It is easily made on a small scale. It consists of two atoms of carbon, one of hydrogen, and three of chlorine ( $C^2. H. Cl^3.$ ); specific gravity 1.48; density of vapor 4.2; boils at  $141^{\circ}$ ; is uninflamable. As a therapeutical agent it is stimulant and narcotic. When inhaled in small quantities largely diluted with atmospheric air, it “increases the frequency and force of the heart’s action.” Carried into the system more rapidly, it depresses the circulation, by partially paralyzing the nerve fibres that are distributed to the blood vessels, and thus, by loss of the power of muscular contraction they become relaxed.

Chloroform does not immediately change the vermilion hue of arterial to that of venous blood, like nitrous oxide gas, or even as readily as ether; but by its long continuance this result will be produced, though in a less degree; in part from the large admixture of atmospheric air that it is always necessary to introduce into the lungs with it, to sustain life. It should never be given more rapidly than from four to five per cent of the volume of the air breathed. If given more rapidly, or in larger proportion to the air, it is likely to produce disastrous results.

Ether is made from distillation of alcohol and sulphuric acid. Its chemical properties are, oxygen about 22, hydrogen 14, and carbon 64, in a hundred parts. It is very volatile, and when exposed to the air becomes impure by absorbing oxygen, gradually changing into acetic acid and water, showing the necessity of keeping it in well corked bottles; and when in use, as little exposed to the atmosphere as possible. If too long kept, and even occasionally opened, it will *sour*, and lose its original quality, becoming unfit for use. This fact should be borne in mind by all who use it. While it is shown that

ether contains oxygen in its composition, and chloroform does not, it does not follow that it can give any more nutriment or stimulant to the blood, as it is a *chemical* combination, much like that of nitrous oxide.

The vapor consists of two parts of bicarbonated hydrogen, and one part aqueous, and is about two and a-half times heavier than the air ; while the ether itself is only about three quarters that of water. This fact should be remembered by all who may use it in the night time. The artificial light should always be held in a position above that of the ether, as its vapor is very inflammable, while that of chloroform, though still heavier is not. In administering ether as an anæsthetic, atmospheric air should be freely admitted, though experience goes to prove that it is not necessary to the same extent as with chloroform, which is more poisonous than ether.

We see, from the chemical properties of each of these three agents, so largely in use as anæsthetics, that there is either not one atom of oxygen, or where there is, it is united by a chemical combination instead of mechanical, or a simple mixture ; and that the lungs possess no power of decomposing the compound ; and consequently none of them can sustain the vitality of the blood. We see too, that when there is not the proper supply of oxygen, the blood loses its life sustaining power ; and, moreover, may be so far devitalized as to cause a separation of its component parts, the nuclei leaving the colored globules and run together, forming fibrine, in fact to coagulate in the veins.

It is a well established fact that narcotism, whether produced by the agent in the stomach, or by inhalation, or by sub-cutaneous introduction, interferes with the proper oxygenation of the blood ; and in proportion to the degree or length of time, is its altered condition. This is peculiarly illustrated in habitual opium eating, and in the excessive use of alcoholic drinks. It is also a well settled theory, and is sustained by facts, that any agent that may directly prevent the oxygenation of the blood, and not produce absolute asphyxia, will produce narcotism or anæsthesia. The question then arises whether this altered state of the blood is the direct cause of the suspension of consciousness, and the power of motion ; whether it alone absolutely stultifies the action of the brain, as is claimed by most writers on this subject ; or is the action of the agent directly on the nerve centres, "the poison mounting up to the brain," as is claimed by others ? The more reasonable conclusion, and best sustained by physiology,

therapeutics and the microscope, is that it is from both these causes; first, depriving the blood of its stimulant, and thereby the nerve centres of the power of communicating with the various organs of the body, suspending the nerve force, or arresting the flow of nerve fluid, or if you please cutting off the supply of electro-galvanism from the mysterious battery. Thus the motor nerves become temporarily paralyzed, and after that the sensorial. This paralysis will be in degree proportionate to the character or extent of the poison in the blood, or rather the extent of its devitalization. The muscles of involuntary motion are the last to yield. The first effects on these are visible through the pneumogastric nerve, as seen by disturbing the stomach as well as the breathing; then upon the great sympathetic, which gives the power of involuntary motion to all the intercostal muscles in breathing. If anæsthesia is too profound, or the agent pushed too far, the branch of the eighth pair, which supply the glottis, may also become paralyzed, when the muscles of the throat will become retracted, the tongue be drawn into the larynx, and strangulation follow; the respiratory muscles cease to act, and death ensues.

This is probably the more usual cause of death from anæsthetics, and should be carefully watched and guarded against; and if it occurs, not a moment's time should be lost in drawing the tongue forward. Death may occur from actual poison to the system in some constitutions; but post mortem examination reveals very little, if anything beyond an impoverished condition of the blood, except that a larger proportion of the agent used is found in the brain, while it contains less than its natural quantity of blood. The next larger proportion is found in the liver, while it contains more than its usual quantity of venous blood; and, in proportion to that of the body a lack of arterial blood.

Some persons succumb to anæsthetics more readily than others, probably from less vital force, or peculiar idiosyncracies that make them more sensible to their influences than others. These cases require a more careful use of the agent, and watchfulness as to its effect.

There are certain conditions of the system where anæsthetics should not be used. The first to be named is a diseased condition of the heart, especially where there are fatty deposits, or fatty degeneration of the muscular tissue. Of the fatal cases, where post mortem has been held, nearly half have revealed this state of that organ.

They should not be used in cases of *delerium tremens*, nor with excessive drinkers, as the condition of the blood is already partially devitalized from the narcotic properties of alcohol. They should not be used in any poisoned condition of the blood; nor during a severe shock to the nervous system, as in case of severe accidents or frights, until reaction is fully established. Never in cases of mania, or determination of blood to the head; it is unsafe during hysteria.

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## PROCEEDINGS OF SOCIETIES.

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### AMERICAN DENTAL ASSOCIATION.

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Dr. Truman said that the success of this use of the oxychloride of zinc must necessarily overthrow the practice of twenty years; and he was not prepared, from anything he had seen or heard, to assert that the filling of roots was a failure. All know that the removal of the pulp is a success, just as far as amputation in surgery is a success, because it is the best thing to be done under certain circumstances. The subject had been treated vaguely by individuals, who asserted dogmatically, without producing facts in support. One asserts that there can be no failure; another admits some; while a third finds the failures to out-balance the successes. There must be a level of truth somewhere; but at this stage we can take nothing about it to be settled: it would require years of observation and experience to arrive at any positive conclusions. The theory of capping, which has been tried for years, was now an acknowledged failure. He had tried the oxychloride for two years faithfully, and believed in it. He had had failures, and thought every one must have them. Certain conditions admit of its use. He had never yet found a pulp dead from its use; but it was impossible to tell what the result might be; and he did not believe that ill success could always be charged to malpractice. It may be that there is something in its antiseptic properties which will preserve the appearance of the tooth after the pulp is dead; but no one can tell what is its mode of operation. These questions should all be studied out at home, and we should not come here to propound theories without an array of well-digested facts to sustain them. American dentists are very far in the rear in their theoretical knowledge; as far behind the Europeans in this department as the latter are behind the Americans in practical skill.

Dr. Searle said that he had had opportunity, during the year, of examining two teeth, filled in 1862 and 1863, of which records had been kept. In that of 1863, superior second bicuspid, the pulp bled, was capped with oxychloride, and filled with gold. In 1869 that filling had been removed; the pulp was found to be living and healthy. This tooth was removed on account of neuralgia. In that of 1862, an inferior first molar, the tooth had ached; it was filled as before. The pain was intolerable for two or three hours, then ceased; there was no subsequent return of pain, nor any discoloration. This tooth had also been removed, and on opening it, the entire pulp was found to have dried up and disappeared; there was no fetor. In other cases inflammation had followed, generally in a very few days; where it goes on for a number of days without pain, he feels no apprehension, the tooth generally dying quietly, without discoloration.

Dr. Judd said the question to be discussed is not whether the practice is always successful, but, Is it judicious? We amputate limbs, and consider that practice judicious under some circumstances. Let us inquire of ourselves, Is it of any importance to preserve the dental pulp alive? Is a live tooth any better than a dead one? He believed, from experience and analogy, that a live pulp *is* better than a dead one? Philosophically considered, the nutritive processes go on at all times in teeth, in their normal condition, even in the enamel. Some think that there are no such changes; but it must be borne in mind that the enamel, dentine, and cementum, are made up of hard and soft substances; and no one will deny that soft tissues change. Take the case of a tooth, the pulp canal of which had been filled; it remained quiet for years, but the patient having an attack of measles an abscess formed: this showed the necessity of the pulp to preserve the tooth under unfavorable circumstances. He considered it of the first importance, then, to save pulps alive; in many cases they do live under the oxychloride, and likewise die, and so also with gold. Many times teeth, the pulps of which were never uncovered, die even when filled with gold. He was not prepared to say under which circumstances most dead pulps were to be found; it was certain they were to be found under both. It was always time enough to kill a pulp, but, once dead, it can never be brought to life again; it was, therefore, a judicious practice to preserve all, if possible, alive.

Pathology is a complicated and unknown subject; less is known of it than of any other in the broad domain of medicine. A few isolated facts and a vast number of theories are all that we have to

show of it. The very first step, etiology, puts us at fault ; we know so little definitely of the causes of disease. He was unable to give a definition of what a cell is, though Dr. Atkinson undertook to explain it. The general idea of a cell is that it is a small body with a cell-wall, fluid contents, and a nucleus ; that each cell lives by itself, and has an influence on its neighbors. It is the opinion of Virchow that each cell dominates a certain territory around it. If this definition of a cell is correct, the idea that it is the ultimate anatomical element is inadmissible. It has been settled by the observations of Agassiz and Beale that there are lower elements than cells capable of performing the functions of development. The ova of turtles were innumerable, and so small that they appeared, under a magnifying power of 17,000 diameters, to be mere homogeneous particles of germinal matter, yet they were capable of true growth. We must not then accord to the cell the honor of being the germinal particle.

The most generally accepted idea of the day, as to diseases, is that they are due to microscopic animals and plants, developed in living tissues. His attention had been especially called to this subject by a paper which accidentally came into his hands from Italy ; in which the author claimed the discovery of the cholera plant, in the mucous membrane of the intestines of the deceased, which he believed to be the efficient cause of Asiatic cholera. Salsbury took up a similar doctrine. Polly gives much attention to the discovery of agents to destroy these growths,—sulphurous acid being found the most deadly to them. Dr. Truman takes the same view of the origin of the green stain on the teeth ; we know that this destroys the texture of the tooth, while tartar protects the structure.

It was not unusual to find a condition of very high sensibility in a part of the dentine of a tooth, and very near it a tract, almost or quite free of sensibility ; and the question had often recurred to his mind how to account for it. He had made a great many sections with the purpose of determining this point ; in many cases tracts were found in which the dentinal tubes were entirely obliterated, the whole structure consisting of calcified matter as far as the tract extended. In one case two entire quarters of the section were found destitute of nerve tubules, while the other portion was plentifully supplied with them. This condition afforded the most satisfactory elucidation to his mind of the absence of sensibility in some portions of a tooth, and its presence in others, showing it to depend on the nerve filaments in the dentinal tube.

Dr. McDonnell. In all modes of treatment success is variable, because the conditions are variable. He had capped teeth by different methods, and on opening them, years after, had found the pulps dead, without having shown any outward signs of change. During the past year he had capped twenty exposed pulps in the method described by the previous speakers; one of these he knew to be dead. In making the application, he found that the degree of pain was regulated by the condition of the pulp; when freshly exposed, the pain was very slight, but it was greater and longer continued in accordance with the amount of congestion. While he was a great advocate for saving teeth, he did not think that anybody could be always successful; much must depend on the condition of the patient. If the exposed pulps were healthy, not one in fifty need be destroyed; it were better to adopt the oxychloride process, and then, even if they do die, there will probably be no pain nor discoloration of the teeth. Where, from the general diseased condition of the pulp, he considers a cure impossible, he removes it; but believes more suffering is generally caused in extirpation than in applying oxychloride.

Dr. Searle inquired whether the application of either creasote or oxychloride to the pulp was not similar in effect, and whether they are compatible with it.

Dr. Atkinson said that anything which contracts the tissues is an astringent, and this is the effect of creasote; it makes a solid mass of the coagulable portion of the pulp with which it comes in contact; the excess acting as a stimulant on the capillaries until its power is exhausted. Exactly the same thing occurs with the hydrochlorate (not oxychloride) of zinc; they are similar in effect, and their mode of action is the same. Any agent which effects coagulation deprives the tissue of the power of forming globules of pus.

Dr. Buckingham, When the albumen is coagulated, will it ever become soluble again?

Dr. Atkinson. Yes and no,—dependent on the extent of the coagulation. The territory in which nutrient action takes place is always a collagenic or mucous mass, whether that be in the general juices of the flesh, or the sarcode, or in the anatomical elements denominated cell, where function is more differently elaborated. We only know a tissue by its anatomical elements, and this difference is that which constitutes the character of the cells. In a general way, teeth may be said to be osseous tissues; but that is too crude a defini-

tion to be of service to the histologist, physiologist, or pathologist. There are three forms of hard dental tissue, known by the character of their cells, viz.: enamel, dentine, and cementum, and they are but differences of degree of calcification, under the dominion of typical presence. The last of these is so nearly like the bone cell as to be readily mistaken for it upon superficial examination. The formation of cells is always uniform in each kind. There is no physical distinction between a cell-wall and its contents; it appears to be a homogeneous mass,—and there is no cell with fluid contents.

Dr. Judd repeated that he had seen but one instance in which two full quarters of a horizontal section were made of calcified tracts, in which the tubules were entirely obliterated, and this was a very uncommon condition, though small tracts of the same character were commonly found. Dr. Atkinson thinks that the dentinal fibres are mere extensions of nervous matter; I believe that within the tubules are true nerve filaments. The first layer of cells forming the exterior portion of the pulp, called "germinal matter" by Beale, penetrate the tubules, forming the soft fibre of Tomes. It must be borne in mind that Beale's investigations, to which we have referred, were made long after those of Tomes, and with vastly higher powers of observation. Beale saw that the terminal point of the nerve fibre, as described by his predecessors, was really not a terminal point, but only the point where it breaks up into an infinite number of fibrils in the germinal matter of the pulp. Now, there is room in the dentinal tubules for whole plexuses of these minute fibrils, and it is reasonable to suppose that they enter the tubules in common with the germinal matter—the tubules measuring  $\frac{1}{10000}$  of an inch, while these minute nerve filaments are but the  $\frac{1}{100\ 000}$ . Further than this, Beale has enunciated the doctrine that there are no terminations to the nerve fibrils, but that, like the electric force, their circuit is continuous, so that there is no break in their attachment to the nervous centres. It is a principle of the Baconian philosophy that known facts are superior to theories; and he accepted the facts developed by the advance of scientific investigation as a far more satisfactory elucidation of the question of sensibility in dentine than any of the fanciful theories which have been proposed.

Dr. McQuillen said that, regarding those present as representative men, understanding scientific principles, and familiar with elementary knowledge, he should not address them as students just entering upon the consideration of such matters; but, paying a decent

respect to the intelligence and acquirements of his auditory, would present what he had to offer as to those qualified to have views and opinions of their own. He differed, in some respects, from the opinions advanced by Dr. Judd in relation to the character of the dentinal fibrils. Tomes directed attention to the fact that the dentinal tubules are occupied by fibrillæ, and Beale concurred in that view; while the former was disposed to regard them as nerve fibres, neither had *asserted* them to be such. Beale, indeed, has spoken of them as *germinal matter* from which the *formed material*, or completed tissue, is made. Dr. McQuillen has seen these fibres in examining pulps, but is disposed to think they are fluid rather than solid during life, and that their solidity under the microscope is due to a change after the removal of the tooth, like the change in the blood by coagulation. We have liquor sanguinis present in the pulp, and therefore the analogy might hold. He advanced this view suggestively, as it is impossible to demonstrate the fluidity or solidity of the contents of the tubules during life, because the structure can only be examined post-mortem. Ten years ago, in making an examination of the pulps of the incisors of the calf, he had found no well-marked connection between the pulp and the walls of the cavity in which it was lodged, except at the end of the root, where the organic basis of the dentine had been formed, with a very slight deposit of the inorganic constituents. On making a longitudinal section of the tooth, the pulp could be drawn out of the cavity without any force being exerted. Indeed, the weight of the pulp was sufficient to dislodge it when the divided tooth was held in such a position as to favor it. The connection at the end of the root, however, was invariably so firm as to require considerable force to sever it. Within the past two months, in making some injections of calve's teeth, he had obtained similar results to those just described, and it induced him now, as formerly, to question, if the dentinal fibrillæ, which he had observed projecting from these pulps, were really extensions of the pulps, how the latter could so readily part from the walls of the pulp cavity, where it would be right to infer they were so firmly secured. Gulliver could not have been more firmly fastened to the ground when each hair of his head was tied by the Lilliputians, than a pulp would be to the walls of a pulp cavity if solid fibrillæ passed directly from it into each tubule. In stating these views, he merely offered them for what they were worth, and with a full recognition of the fact that one has no right, except inferentially, to draw

deductions from observations on animals and apply them to man. He would, therefore, direct attention to the ease with which the pulps of human teeth can be removed with a barbed probe ; an incomprehensible operation, if the supposed connection really existed. Let any one attempt to remove the periosteum from sound bone where direct connexion exists, and find the character of the adhesion.

But we are met with the inquiry, Can any other than nerve substance transmit impressions through the tooth? He could see no reason why it might not. The air transmits sound, by waves of vibration, and if one end of a long stick be placed near the ear, and the other end be scratched by a pin, the sound would be transmitted along the stick to the ear ; and sensations, in a similiar manner, might be transmitted through the tooth to an impressible pulp,

As to the advisability of using oxychloride of zinc, he believed in trying whether a thing was good or bad. He had tried this preparation on exposed pulps in a number of cases—in two instances in particular, which he had watched. After a month, the teeth were in a comfortable condition, and possessed evidences of vitality in color, sensation, etc. What the future result would be, time alone could reveal.

Dr. Truman said that when Tomes made his first statement in regard to nerve fibres, ten years ago, investigations had not been carried to their present degree. The method he had pursued was extremely imperfect. Beale indorses Tomes' view, but calls the tubular contents germinal matter, and proves his position by the experiment with carmine. Since Beale, Boll of Germany has written upon the same subject, in which he takes the same position as to the nerve fibres, and proves it by experiments on the rodents. In this country similiar experiments had been made. He was not prepared to admit the correctness of Dr. McQuillen's position. The best method of observing these fibrils is to prepare a section of a fresh tooth, and treat it with hydrochloric acid ; this will remove the animal matter, and bring out the fibres on the slide by thousands. As they present the peculiar appearance of nerve fibres, he was satisfied that they were such.

Dr. Buckingham. Is it necessary that a nerve fibre should be touched to cause sensation? It is not necessary. He favored the idea that the action in the cells is similiar to the action in the galvanic battery,—the wires representing the nerves. There is great similiarity between chemical and physiological action. Where does

the nerve fibre terminate? There is no necessity of its going to each cell, but only in its neighbourhood; and the impression may be conveyed to any part, whether in a fluid or solid state.

Dr. Shadoan said that, in case of exposure, and the pulp membrane being wounded, his practice is very much like that of those who had spoken before him, with this difference,—he applies creasote or carbolic acid until the hemorrhage has entirely ceased, then dries out the cavity thoroughly, and with a blunt-pointed instrument, of suitable size and shape, applies a single drop of collodion to the point of exposure, allowing the ether to evaporate; then, on applying the oxychloride of zinc, there is perfect protection to the nerve.

If the nerve is exposed, and not wounded, the application of the collodion will form an admirable protection from the immediate contact of the oxychloride. He found that, where this precaution was used, the pain is seldom appreciable, and often there is none at all. There is something in the manner of applying the paste. He found that the softer it is, the more pain and less dense the mass when hard; and the harder the paste, so it is plastic enough for use, the harder it will become. There is no better way to apply it than by having all things ready to manipulate, and having an instrument wound with a little cotton, dip it in a very thin solution of the fluid, and mop or wipe out the surface of the cavity, and apply the paste; then gently tap the tooth, and the paste will settle nicely and uniformly to the bottom of the cavity. If the paste proves rather soft after applying it, the excess of fluid may be taken up very readily by pressing some spunk or bibulous paper upon the surface. Oxychloride of zinc is valuable in filling the pulp chambers of teeth where the roots have been filled. It makes a firm foundation for the filling, and arrests thermal shocks, which are sometimes troublesome where the gold is continuous from the crown to the apex of the root.

#### DENTAL CHEMISTRY.

Dr. Buckingham said, in the absence of any report from the Committee on Dental Chemistry, he had been requested to make some remarks on the subject. There had been little progress in dental chemistry during the past year, and he would, therefore, confine himself to a statement of the direction of inquiry among investigators in the department of chemical science. He considered it to be a subject of most serious regret that this science, which lay at the foundation of all others, was so universally neglected by the community.

The ignorance upon this subject was most deplorable. How many students or learned men could tell the constituents of the air they breathe, the water they drink, or the bread they eat ! Not one in five hundred of them could tell how many elements there are; so that professors are obliged to teach the A B C of the science, instead of finding students ready to be instructed in the higher branches. As in reading, it is necessary, first, to master the letters and their capabilities of combination, so it is in chemistry. The elements, sixty-five to seventy in number, with their equivalents and atomic weights, are the alphabet of the science from which all chemical combinations arise ; the properties of the individual element being lost in the combination, just as in words the essential part is not found in the separate letters, but in the thought suggested by the whole.

The investigations of the present are directed, not to matter so much as to the forces which control matter. The great question is whether there is one force or many. Whether heat, electricity, motion, etc., are several forces or phases of one force. Motion produces sound, which is conveyed to the ear—hence, hearing ; a faster motion produces heat ; another motion produces light, the varieties of color being due to the different degrees of rapidity of the motion. These views have not been demonstrated, but the current of opinion is in favor of their correctness. The whole universe is in continual motion ; harmonious motion is necessary to nutrition and health, and the disturbance of that harmony produces pain ; thus extreme heat or cold produces the same effect. While the elements cannot be changed, their combinations are illimitable ; and living bodies are continually nourished by appropriating from these combinations, in the form of food, that which they require, passing off the refuse in lower states of combination. The speaker dwelt at some length on the important part chemistry performs in the physiology of life and concluded by animadverting upon the skeptical tendencies of many modern scientific investigators, such as Darwin, Spencer, and others, whose disposition seemed to be to set up some great natural force as the origin of all life and motion, whereas he believed all life-force to be subordinate to spirit-force, proceeding from the Almighty Creator.

Dr. Judd said it was true more attention was being paid to the affections of matter than to matter itself. Although matter may be ignored in the study of the forces, it is nevertheless indispensable to their operation. It is impossible to have any notion of motion apart from matter. He proceeded to state the views of Tyndale and Grove

on this subject, with the latter of whom he expressed his agreement.

Dr. Buckingham. We cannot understand the existence of a force without matter; neither can we conceive of motion without something to move. Hence scientific men invented the idea of an ether, which should be the medium of conveying the idea of motion. The consideration of the origin of forces occasions the continual recurrence of the question, Are there many forces, or is there but one acting in different ways? When matter was made, the laws controlling it were made, and they must continue to the end of time. Man has no conception of sensation apart from matter, nor of the manner in which he reasons.

Dr. McQuillen congratulated the Association on the fact, that although the Committee on Physiology had failed to make a report, the one on Chemistry supplied the deficiency by the introduction of such important questions as the Correlation of Forces and the Origin of Species. In the discussion of such subjects, they should be examined in the calm, dispassionate manner in which other purely scientific themes would be considered. Above all, it should be recognized that the right to seek after the truth, even though it should lead to a conflict with long-cherished opinions, is the highest prerogative of man. As Herbert Spencer has justly said,\* "Early ideas are not usually true ideas. Undeveloped intellect, be it that of an individual or that of the race, forms conclusions which require to be revised and re-revised, before they reach a tolerable correspondence with realities. Were it otherwise, there would be no discovery, no increase of intelligence. What we call the progress of knowledge is the bringing of thoughts into harmony with things, and it implies that the first thoughts are either wholly out of harmony with things, or in very incomplete harmony with them.

"If illustrations be needed, the history of every science furnishes them. The primitive notions of mankind as to the structure of the heavens were wrong; and the notions which replaced them were successively less wrong. The original belief respecting the form of the earth was wrong; and this wrong belief survived through the first civilizations. The earliest ideas that have come down to us concerning the nature of the elements were wrong; and only in quite recent times has the composition of matter in its various forms been better understood. The interpretation of mechanical facts, of mete-

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\* Although not quoted *verbatim* in the discussion, in justice to the subject and to Mr Spencer, his exact language is presented in the report.—J. H. McQ.

orological facts, of physiological facts, were at first wrong. In all these cases men set out with beliefs, which, if not absolutely false, contained but small amounts of truth, disguised by immense amounts of error.

“Hence the hypothesis that living beings resulted from special creations, being a primitive hypothesis, is probably an untrue hypothesis. If the interpretations of nature given by aboriginal men were erroneous in other directions, they were most likely erroneous in this direction. It would be strange if, while these aboriginal men failed to reach the truth in so many cases where it is apparently conspicuous, they yet reached the truth in cases where it is comparatively hidden.”

That mystery of mysteries, the origin of species, is occupying the undivided attention of some of the keenest and clearest intellects in the world. Darwin, in particular, a devoted student of nature, after years of labor spent in accumulating an immense mass of facts, has drawn certain inferences, which are entitled to a candid, careful examination before being rejected as unfounded and worthless. A significant fact, but not by any means a surprising one, is that most of those who oppose or denounce his views, have never read his works, and therefore knew nothing of the facts and arguments presented in them. Thus is it ever with innovators and innovations. In the language of Professor Agassiz, “Whenever a new and startling fact is brought to light in science, people first say, ‘It is not true,’ then that ‘it is contrary to religion ;’ and lastly, that everybody knew it before.”

The time is too limited to present even a faint synopsis of the Evolution theory, but it may not be amiss to say, in a few words, that Darwin has not attempted to solve the question of the origination of living or organic beings, but, supposing their creation to have taken place at first in the lowest forms, he accounts for the origin of species through the perpetuation and modification of the original types. First, by the possession of a peculiar property, which he calls Atavism, from *Atavus*, ancestor, living beings inherit the character of those from whom they arise. Second, there is also manifested a tendency to variability, due to the influence of the surrounding conditions of existence ; and an alteration having occurred in certain beings, it would be transmitted to their descendants. In the lapse of geological ages, the combined operation of these tendencies to the transmission of hereditary properties, and of occasional variability, due to the

changing conditions of existence, combined with the struggle for existence between individuals of different species (in which those possessing the greatest facilities for obtaining food, or resisting external destructive agencies, would survive and multiply, while those less fortunate would gradually die out), Darwin believes may account for the infinite variety of species extinct and present.

In presenting these views, I do not wish to be understood as asserting, beyond a question of doubt, that they are true ; but that, after spending a number of years in examining the facts and arguments offered, the conclusions arrived at appear to me reasonable and logical inferences. It is sincerely to be hoped that those present may become thoroughly familiar with the writings of Herbert Spencer, Darwin, Huxley, and Lyell, particularly before denouncing or rejecting the views advanced by them as unfounded and worthless. In this restless, inquiring age it is useless to attempt to silence the outspoken words of earnest investigators by the mere dogmas of the past. On the contrary, we should hold ourselves ready to examine and receive new truths, and to abandon erroneous opinions, when convinced of their fallacy. In this connection, I am free to admit that the sharply-defined boundaries between inorganic and organic matter, and the vegetable and animal kingdoms, contended for in the past, have lost much of their significance to my mind, when viewed by the light of recent investigations and reflection.

The constant interchange between inorganic and organic matter, the dependence of the vegetable upon the mineral, and of the animal upon the vegetable, as a factor of organic matter ; and the return of the elements entering into the composition of the vegetable and the animal to the source from whence they came, to be similarly used again and again, for all time to come, by other beings, tended to lessen the gap between the inorganic and organic, the vegetable and the animal, and leads to the recognition of the fact that "Nature is a unity in diversity of phenomena ; a harmony blending together all created things, however dissimilar in form and attributes ; one great whole animated by the breath of life."

Dr. Buckingham said that, according to the materialistic doctrine, all animals were developed by continuous progression, from the primary cell through all the lower genera and species up to man, and they look for the development of a being of a still higher order. All things, according to them, were derived from combination, without the intervention of any supreme power ; as if there were nothing

superior to the types or letters composing any printed matter. Even as the letters are of themselves expressionless, dependent entirely upon the thought breathed into their combinations, so the forms of nature are dependent upon the supreme mind for their principle of life. The tissues have been counterfeited in all respects, except that vitality cannot be imparted to them. The materialists make no calculation upon a future existence ; all their theories are limited to the development of the highest order of natural existence ; beyond this they know nothing and admit nothing.

Dr. McQuillen said that Herbert Spencer has divided his "First Principles" into the unknowable and the laws of the knowable ; under the first, defining the province, limits, and relations of religion and science ; and under the second unfolding those fundamental principles that have been arrived at within the sphere of the knowable ; which are true of orders of phenomena, and constitute the foundation of all philosophy ; and maintaining the law of evolution to be universal in its operations.

In the discussion of all scientific subjects, and particularly those under consideration, it would be well to recognize this distinction, and not confound the unknowable with the knowable, but to confine attention to the latter alone. I cannot, however, in justice to myself and others, permit the imputation of the denial of a Supreme Being and of a future existence to pass unnoticed, as it is a gratuitous and unfounded assumption. The theory of the origin of species by variation or evolution does not imply the denial of a Creator ; on the contrary, it attributes everything to the operation of immutable and unchangeable laws ; nothing to the work of chance. The testimony presented by the rocks affords substantial evidence that there has been a gradual and progressive evolution or development from the lower to the higher forms of life. Thus, in the Silurian, the lowest of the Palæozoic rocks, the remains of invertebrates alone are found ; following these, vertebrates (fishes) first appear in the Devonian ; then come, in varying intervals of time, reptiles, birds, mammals, and, last of all, man.

The contemplation of such a humble origin in the past naturally leads to the anticipation of a still higher and nobler development in the future. Is there anything humiliating in the recognition of the fact that the life of man is dependent upon the continued destruction and consumption of plants and animals which enter into and become part and parcel of his organism ? It has been estimated that a man,

weighing one hundred and fifty pounds, in the course of a year consumes a ton and a half of inorganic and organic matter,—in the air he breathes, the water he drinks, and the vegetables and animals he feeds upon,—and yet, at the end of the year, he weighs the same. What has become of all this matter which, like a continuous stream, has flowed through him, and maintained his form, apparently unchanged? It has returned to the source from whence it came, to be again used through all time. The inorganic matter of to-day may become organic matter to-morrow, to be again reduced, perchance, to inorganic matter on the following day. Man dies daily, and lives by dying. If the matter upon which his entire system depends is thus daily returned to nature, it naturally follows that in the final dissolution of the body, its component parts must be resolved into the elements to enter into new combinations.

To those who cannot deny these truths, but may cry out Materialism! in response to such statements, I would say that I never hear that sublime Epistle of Paul to the Corinthians, which is used on the most solemn occasions, connected with the dissolution of earthly ties, without being impressed with the learning and far-reaching philosophy of the great apostle, who there teaches, what many of his professed followers are so slow to learn, concerning the resurrection, that it is not the natural body, which is corruptible, but a spiritual and incorruptible body which is raised,—“So also is the resurrection of the dead. It is sown in corruption it is raised in incorruption.” “It is sown a natural body; it is raised a spiritual body.”

Dr. Atkinson said it is well enough to define species, but it has not yet been done; when that has been attended to, it will be time enough to define the origin of species. Chemistry is the lowest manifestation of organic force, and the expression of the physiology and pathology of the mineral kingdom. Atheism is insanity; under the Divine government it is not possible that a being possessed of human intelligence can be an atheist. Nothing can be appropriated without being disrupted from its former position. The whole idea of assimilation is indicative of the destructive and constructive processes, without which the system cannot be sustained. Each form must be destroyed as to its identity before it can be appropriated, and each process has a chemical, mechanical, and dynamic aspect, without a knowledge of which its understanding is incomplete, and the process of nutrition an enigma to us.—*Dental Cosmos*.

(To be continued.)

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SELECTED ARTICLES.

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COMPOUND CAP RESTORATION.

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An operation was performed in this city during the months of May and June, 1869, by C. E. Blake, assisted by me, which is new in dentistry, and a description of which will be of interest to those in pursuit of dental science.

The gentleman upon whom the operation was performed, had been wearing a superior denture of artificial teeth, and having worn the remaining inferior teeth very much away, nearly to the margin of the gums, the four first inferior molars and second right bicuspid having been removed several years previously, the remaining portions of the dens sapientiæ had been forced very much forward.

May 13th. Applied the spray of sul. ether to the left dens sapientiæ, and when sufficiently benumbed, cut into the nerve cavity, which was but a slight distance, and extirpated the nerve with small barbed broaches, designed for the operation, the sensation being very slight. Owing to business engagements, the case remained under attention.

May 20. After preparing and cutting threads with a screw tap, inserted two screws of pure gold three-eighths of an inch in length, and one eighth of an inch in diameter. As the posterior root extended back, the back screw had to be fitted in first, and curved, to bring the upper ends of the two parallel, where the threads of the screws had been removed, and the two adjusted, filling up the threads and remaining space with Roberts' Os-artificial. The amount required was very little, as the screws nearly filled the orifice.

After the operation came a plate of pure gold, in thickness about twenty-nine by gäuge, and one-sixteenth of an inch larger than the grinding surface of the tooth. Two openings were made in close proximity. The grinding surface of the tooth had worn down a little concave and uneven; the gold plate was therefore put on and tapped down with instruments and mallet, to fit the surface perfectly by annealing it up, and a hard plate for service, composed of platina and gold, one-eighth of an inch in thickness and nearly the size of the tooth, fitted to the first plate, with the opening deeply counter-sunk around the ends of the screws. They were then taken off, and the two plates soldered together. There was then placed on the under surface of the thin plate, and of the same size, sixteen layers

of gold foil, so as to make the adaptation impervious to the fluids of the mouth. The sharp corners of the tooth were then slightly taken off, in order to make a better fit, and to avoid any small fracture of the corners in the adaptation.

Everything now being ready and the usual precaution made to keep it dry, the compound plate or cap was put on in its place, and the upper ends of the gold screws were riveted down with the serrated pointed pluggers, and by the use of the mallet; and the remaining part of the counter-sunk cavity was filled with gold foil and sponge gold all solid and tight. The extended margin of the pure gold plate, together with the foil underneath, were then tapped down around the corner of the tooth. The perfect manner in which the plate of pure gold was tapped over and around the margin of the tooth, leaves no doubt of its security. About eight hours were consumed in the last operation.

May 24th. The corresponding molar on the right side was taken in hand, and the nerve pulp extirpated.

May 28th. A successful operation was performed similar to the first. Subsequently, three bicuspid, and one canine were treated and tapped in the same manner, with the exception that but one screw was inserted in each fang—some of which, gold foil was plugged around the screws in the fang to secure a perfect fastening.

On completion of these operations as above described, there was not any uneasiness or pain experienced by the patient, except in the first bicuspid, on the right side, which had been treated for alveolar abscess eight years previously, and was quite sensitive and painful during the operation, but yielded readily by the application of an astringent wash, and in a few days was restored to its former tone of health.

The crowns of several of these teeth, some eight months previously, had been built up solid by the use of the mallet, with adhesive gold; but after a few months' use it was discovered that they were rapidly wearing away, caused by the grinding force and hard surface of the artificial teeth coming in contact with the pure gold. This suggested the operation of capping with hard metal as the most permanent manner of prolonging their use.

The above operations being new in the practice of dentistry, and having taken an interest in their performance, I take the liberty to give them the name of Compound Cap Restoration.—*Pacific Med. & Surg. Journal.*

## CASE OF DEAD MISPLACED WISDOM-TOOTH OF LOWER JAW.

May 9th.—I visited A. R.—, æt 65, who has had for some years a swelling of the left side of his face, accompanied, at times, by severe pain.

During the winter of 1864 the left side of his face was frozen ; two weeks afterwards he felt severe pain on the same side of the lower jaw, for which, by the advice of a Physician, he had the molar teeth on the corresponding side of the upper jaw extracted but without relief. The lower molars on this side had been removed several years previously. During the following summer he did not suffer ; in the winter of 1865 the pain recurred and was then accompanied by swelling of the part. He has suffered every winter since then, and for the last eight months so continuously, that he has not been able to work. The swelling which had been gradually increasing for two years, was opened nearly three months ago, by a Physician and a considerable quantity of fetid pus evacuated, with immediate relief to the pain, which had been lulled previously by repeated blisters. Since then the pain has recurred several times with its usual severity ; the swelling is now less than three months ago. There is a prominent tumour over the left ramus reaching upwards from the angle to the zygoma, forwards to the inferior angle of the malar bone and backwards to the mastoid process of the temporal bone ; the lobe of the ear is pushed backwards. The tumour is very firm. A large portion of this tumour is formed by induration and thickening of the soft parts but there is undoubtedly hypertrophy of the bone ; the skin over the anterior portion of the tumour moves freely, posteriorly it is bound down and marked immediately above the angle of the jaw by two scars. Nothing abnormal is detected in the mouth except the absence of the molar teeth on this side. He cannot separate the incisors of the upper and lower jaw more than a quarter of an inch. Necrosis was suspected ; it was concluded to make an exploratory incision.

May 24th.—For four days he suffered agonizing pain in the tumour, which burst yesterday, giving exit to a small quantity of pus. A probe was passed into the sinus but bare bone was not felt. Blisters ordered.

June 24th.—He has been suffering more or less since last note ; he is thin and looks haggard from want of sleep ; pulse 56 ; bowels

costive; urine normal; he has a reducible scrotal hernia of right side for which he wears a truss. Ordered a dose of castor oil.

June 25th.—After the patient had been brought under the influence of chloroform an incision was made down to the bone, along the posterior border of the ramus from the articulation to the angle; this was afterwards extended anteriorly to the notch for the facial artery. The soft parts were then separated from the bone, when it was observed that the surface of the ramus presented no unusual appearance and that tumour was of the soft parts. On examination it was found that what had been considered merely indurated tissue was a hard fibrous-like tumour well defined, superficially but firmly attached to the ramus in its whole extent (from which it had been separated), and to the zygoma. From this tumour the superficial parts were carefully dissected without opening into the mouth and its remaining attachments to the bones separated. The facial and one or two small arteries which had been cut were torsioned. At one place only, viz.: over the anterior border of the tumour, were any fleshy fibres of the masseter observed. On careful examination of the surface of the ramus, a small opening or cloaca, which merely admitted a probe, was detected; after this had been enlarged by the bone forceps, the probe was passed anteriorly and loose bare bone felt. The opening thus made was again enlarged and a small cavity or cyst, situated a little anterior to the angle laid open, in which lay horizontally a wisdom-tooth with its crown directed backwards, the tooth the fang of which is partially cariesed, was removed; the edges of the wound were then brought together by silver sutures.

Only six drachms of chloroform were used, though the patient had been kept fully under its influence for an hour. The anæsthetic was administered by Dr. A. Rosebrugh. of Toronto, according to his method.

On the 28th about an ounce of fetid and sero-purulent matter was pressed out of the original sinus. By the 29th his pulse which had been 80 on the 27th, had fallen to 60. On July the 1st the stitches were removed, about one half inch of the wound has united by immediate union, the rest by primary adhesion.

July 3rd.—There is no discharge from the sinus. He has been going about the house for four or five days and has not felt any pain in the part since the 30th of June; his appetite is excellent and he now sleeps for six or eight hours continuously; for one year pre-

viciously to the operation he never slept more than two or three hours at a time except when under the influence of opium.

Sept, 14th.—Patient has been working steadily for the last six weeks and has not suffered in the slightest; the paralysis of the left side of face, resulting from the division of the portio duro, is not so marked as it was two months ago.

This case is interesting in two respects, viz.: that the misplaced wisdom-tooth did not give the patient any inconvenience till its death, which in all probability, was caused by the frost bite, and that long continued irritation, altered the character of muscular tissue to that of fibrous.

I take this opportunity of thanking Drs. Macdonald, A. Rosebrugh, Mullin and Reid, for their presence and assistance at the operation.  
—*Canada Medical Journal*.

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## CORRESPONDENCE.

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BOWMANVILLE, Dec. 1st 1869.

*Mr. Editor*,—Would you be kind enough to inform the readers of the C. J. D. S. how it is that the Dentists of Toronto have not as yet taken any action in forming a society, which will take in all practising dentists east of Toronto as far as Cobourg. I am sorry to see so many dentists as there are in Toronto at present, allowing societies to be formed all around them, and they take no action in the matter. Are we to be left out in the cold? If so it is high time we know it. I do hope and trust before your next issue, that the Dentists of Toronto will have come together and formed themselves into a society that will long live to do good service.

I remain,

Yours very truly,

T. J. JONES.

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NAPANEE, Dec. 2nd 1869.

*Mr. Editor*,—It may be of interest to the profession generally, to know, through your valuable Journal, whether any steps have been taken to amend the Act Respecting Dentistry, for this Province, during the present Session of the Legislative Assembly. I think as it now exists it is a blank on two very important points. First, as to the penalty mentioned in the Act, the law may be violated and

unless the violator be worth more than that allowed him by the exemption what can be done? Second as to the application of the fine. To what shall it be applied? There is no provision in the act for it. There is a non-Licentiate practicing Dentistry in our "very teeth," as it were, and though possessing all the evidence required and the will to prosecute, he defies us and the law. Will you instruct us how to act in the matter? Must we and the public be imposed upon because of the weakness of the law?

Yours truly,

S. T. CLEMENTS.

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## EDITORIAL.

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### THE QUEBEC LICENCE.

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By the 30th of next March, every dentist in the Province of Quebec, is required by law, to be in possession of the license to practice; and any dentist continuing to practice after that date, without holding such license, whether he has been in practice twenty years or twenty days, will be liable to summary conviction, a fine of \$100 and costs, and if necessity arises, distress of goods, or imprisonment. It is well, in the beginning, to remember that the Dental Act of Incorporation is as positively a law, and as much intended to be enforced, as any other Act, special or otherwise, on the statute book.

We do not intend to discuss the question, whether or not the profession should be incorporated. That has been discussed to death, and is still a matter of opinion, just as much as whether or not a murderer should be hung, or whether or not there should be any legislation for anything. However, the feeling in favor of dental legislation is fast becoming wide spread, even among our republican neighbours where they boast of the genius of their free institutions; and the results everywhere so far, have proved of immense advantage to the profession and the general public.

To those actually quacks, or disposed to be, any law restricting liberty to charlatanism, is just as opprobrious as the law against larceny to a thief. The time has gone by forever when we may expect to reason or persuade such parties into change of conduct; though, we believe there is more hope of a Jack Shephard than a Crawcour, any day. The theory of gentle persuasion, and mild, lovable logic, is all sentimental moon-shine with such men, and just as likely to ac-

comply with the desired end as the efforts of the impostor Mohamet to move the mountain. We believe in severe measures for criminals out of jail as well as convicts inside, and have little sympathy with the principle of elevating or converting arrant dental quacks by any other means than that of legislative rigour judiciously and firmly applied. Too cunning to meet us face to face in our Associations, they are sure to be brought to terms by just such means as are now within the jurisdiction of the Board of Examiners of Ontario and Quebec. The objects of dental legislation must surely commend them to every intelligent citizen who believes that if it is proper to protect society from imposition in matters of trade and business, of which they know something, and can use their own judgment, it is even more proper and necessary, in matters of which they are ignorant. There are few intelligent persons who are not aware of human disfigurement and in some cases destruction of life, possible by dental quackery, working as its professors do on the human body, and daily using deadly poisons such as arsenic, morphia &c., and having full liberty to administer dangerous anæsthetics, a few inhalations of which to one of unsound constitution, have in many cases caused immediate death. Is the protection of one's pocket of more account in the eyes of the law, than health, and life itself?

A couple of papers in Montreal, the editors of which are something like two dogs howling at the moon, one begins and the other takes up the strain, recently undertook to censure the Quebec Board of Examiners and condemn the principle of dental incorporation *in toto*. Upon inquiry we found that a notorious quack had pulled the wires, and had actually made them both believe black to be white. Such dodges were tried in Ontario, and with every other resource the Ontario quacks could muster, but the phalanx of earnest men who fought for legislation there, bore down all before them; and the malcontents had a fate something like that of the Black Mousquetaire, who

"Who went down with a groan and a frown,  
And a hole in his small clothes the size of a crown."

The Ontario malcontents were ten times more numerous than those in Quebec. Not a respectable dentist sympathizes or sides with either. The moral is clear.

While we are sure that the Quebec Board will use their powers judiciously, and endeavour to meet the respective merits and circumstances of applicants for license, we are also sure there will be no

two interpretations or applications of the law, and that quackery will not be left a leg to stand on.

W. G. B.

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### THE EFFICIENCY OF THE ONTARIO DENTAL LAW.

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We have received a large number of letters from dentists in the different parts of the Province, in regard to the working of the Dental Law, nearly all of which contain grievous complaints about its inefficiency. We publish one in this number from Mr. S. T. Clements, of Napanee, which is a fair sample.

Some ask why the Board does not protect them from those who are practicing without license, some say the law is a humbug and should be repealed, as they receive no benefit from it, and some ask why no action has been taken to have it amended. We wish to give all the information in our power to our correspondents, but, as we have not time to reply to each separately, we will do the best we can by giving our opinion of the law and its working through the columns of the Journal.

As we have said before, we consider the Ontario Act far superior to any law regulating the practice of dentistry in existence. The Acts in England and the different States are not to be compared with it in efficiency. It certainly is not perfect, and will require to be amended in some respects after a few years. But, gentlemen, let us carry this law out *faithfully* as it now stands till we see in what respects it can be improved before we again ask the Legislature to come to our relief. There are good and wholesome laws on the statute book against murder and robbery, which are constantly being broken, and we think that it is just as unreasonable for any one to ask to have them amended because people murder and rob, as it is to ask to have the Dental Act changed because some practice in violation of its provisions. It provides a way for the fining of all who practice without a proper certificate from the Board, and we have the authority of the police magistrate of this city for saying that all fines are like taxes, and can be collected if the person fined have *any property* whatever. Surely he must be a very pauper of a dentist who has not twenty dollars worth of instruments.

We do not think that the Board ought to be expected to look after delinquents, any more than any other twelve dentists of the Province, as they are no better protected than the others, and the Act

empowers others to prosecute as well as them. We know the prosecution of a neighboring dentist is not a pleasant thing to do, and we fancy that one reason why so many urge the Board to protect them, is that they do not wish to act in the matter themselves. We do not see how the law can be improved in this respect. But these are not the only complaints which have been made to us. There is another class of dentists which we think are, it possible, more culpable than those practicing without a license. We refer to those who go about from place to place, and from house to house, soliciting patronage. We hear that there are quite a number of this class.

Section 13 of the Act empowers the Board to make such needful rules and regulations "as may be necessary for the proper and better guidance, government and regulation of said Board and College, and said Profession of Dentistry." In accordance with this provision, the Board passed the 8th By-Law which reads as follows, viz : "This board shall have power to cancel the lisenice of any person who shall wilfully violate any portion of the Act Respecting Dentistry or any of the By-Laws, rules, and regulations of the Board, on proof being furnished of such violation," and Rule 4, for the guidance of Licentiates, "Dentists cannot have more than two offices, independent of their regular established office, and they must be at places visited at regularly stated periods."

The rule allowing Licentiates to have two offices besides their established place of business, was made so as to enable those Dentists, living in small villages, where the population is too small to support a dentist comfortably, to visit two others at regular and stated times, but certainly, no one will contend that it can be made to apply to Dentists running into market towns with their instruments under their arms and soliciting business, or getting others to solicit it for them, and then dodging into the nearest shop to do it, without even the pretence of keeping an office. Such conduct would not be tolerated for a moment in members of the Medical Professions.

We hear that proof is being collected against several, who are said to be practicing in open violation of the above By-Law and Rule, and if one-half that is reported against them can be proven, we do not see how the Board can help cancelling their Licenses. If Dentistry is ever to be elevated to the standard contemplated by the Act, it is necessary that every Licentiate should see to it carefully that all its provisions as well as the By-laws and rules of the Board are faithfully carried out.

When, if ever, every Dentist "does his duty," we shall see our loved Profession brought up to that point to which we have most of us been striving to bring it for the last three years, to that point to which our American cousins, when reading our acts, by-laws, and rules, think it has been brought. As a stimulus to us all, and as giving the idea which has been formed of our movements so far, we append a portion of a letter which we received a few days ago from a Dentist who left this city about twenty years since and settled in Grand Rapids, Michigan:

"It delights me much to see the upward and onward progress the dentists of Canada are making. We have tried in this State for four years, to get a law passed to regulate the practice of Dentistry, and to protect the people from damage by dental quackery but cannot succeed yet. I think of emigrating to the Dominion."

C. S. C.

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THE QUEBEC DENTAL LICENSE.—Through the kindness of the Secretary of the Quebec Dental Board, we have received a copy of the License granted to those who pass the examinations in that Province. It is very neatly got up copper-plate, printed on parchment, and quite puts the Ontario License in the shade.

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THE Medical Gazette says that the New York Dental College has triumphed over all its difficulties and was opened for the winter on the 15th ult.

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The next session of the Board will commence on Tuesday the 18th of January, at Toronto.

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NEARLY SWALLOWED HER TEETH.—A middle-aged lady in Detroit was suddenly seized with a vertigo and fell to the sidewalk. A physician found that she was being strangled in some manner. Investigation revealed the cause in the shape of a set of false teeth that had dropped from their position as the head of the lady thumped on the sidewalk, and in her gaspings for breath had been drawn into the throat so far that she was with difficulty relieved.

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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EXTERNAL APPLICATIONS IN INCIPIENT ALVEOLAR ABSCESS.

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BY W. GEO. BEERS, MONTREAL.

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It needs a comparatively limited dental practice to discover, that no inconsiderable amount of ignorance prevails among the large proportion of our patients, and to some extent among medical men, regarding the diagnosis and treatment of those cases of toothache which result in incipient alveolar abscess and swelling of the cheek. As a general thing there is no distinction made between exposure and inflammation of the pulp of the tooth, and inflammation of the periosteum; and the orthodox treatment of cloves, creasote, and hot fomentations is used, until after a long period of experimenting, the sufferer finds in the dental surgery, final and possibly fatal relief, where he might have found successful treatment at first.

There is a tendency among all classes of people to undertake their own treatment in the incipient stages of disease, and even in many instances, in cases where disease has made extensive progress; and an immense amount of faith is pinned to the *ipse dixit* of some antedeluvian granny; or to some quackish pill, drop, or lotion, which whether they kill or cure, succeed at all events in the principal object for which they were manufactured, viz.: making fortunes for their inventors. Every druggist can testify, that people who, by their own confessions, and the questions they ask, prove themselves to be almost ignorant of the real nature of their complaint, and blindly ignorant of the proper means to be used for restoration, will assume to over-

turn the prescribed rules of their physician, and swallow advertised specifics, without regard to quantity, quality or cost. Occasionally we meet too, with people who pretend to know a thing or two about the nature and treatment of complaints they may have, and pooh-pooh whatever may be said by men who have made human disease and treatment their special study. Such people generally have the most implicit faith in some one remedy, which they would use internally and externally, as well for an in-growing toe-nail as an attack of rheumatism, as well for a corn as a cancer. The wonder is these people do not apply for a charter for a college, and add another branch to the great family of medical specialists.

In all respects, the case is identical in toothache. It is so common a complaint that there is no old nurse under the sun, but can recommend a specific, and the pain is so often severe, that the sufferer is willing to test any and every proposed means of relief. In the general ignorance of the best means for allaying the pain of toothache, there is, as I said before, no distinction made in very many cases, as to the nature and origin of the disease. The great majority of sufferers do not present themselves to us, upon the the first premonitions of pain. We find they have been using every known means to allay the aching, and extraction is often an absolute necessity, by reason of the aggravated state to which the disease has been brought by the local and constitutional irritants used by the patient. I have seen patients who had actually scarred the gum and adjacent soft tissues with a piece of iron, heated red hot, in some superstitious belief, or upon some recommendation of an old work on domestic medicine. We frequently see mouths and faces severely blistered and scarred by the use of creasote, applied without judgment or care to a cavity of decay. But more serious results ensue from the common custom of using hot fomentations and poultices to the outside of the face in incipient alveolar abscess. Cases are on record of abscess attracted to "point" at the side of the neck, under the chin, behind the ear, and at different other external places, producing fistulous openings that lasted for months, and sometimes years, and ugly cicatrices for life, after the abscess had healed.

No doubt many cases occur which are never known to the dentist, but any practitioner can refer to cases in his own practice, brought by the experimenting of the patients themselves, or the advice of some sympathizer.

One case is well known to the dentists of a western town, where a party, whose experience of twenty years ought to have taught him better, mistook the swelling from several ulcerated roots for a tumour, and who actually opened the cheek, and "operated" without once discussing in his mind whether or not the diseased teeth had anything to do with the trouble. After suffering inexpressible anguish, the pus was discharged under the chin, and upon consulting a dentist, she was assured that the diseased roots were the cause. Relief was had after their extraction.

This morning I had a case of the kind. A beautiful young lady who had been under treatment in a town of New England, for a swelling of the cheek, which had extended so far as to close the eye on that side. A relative, who was in his second year at a medical college, undertook to cure her. He explained the nature of the tumour, as he called it; told her it was "just as easily removed as a button from a coat," and led her to believe that he was thoroughly competent to operate. With the aid of a fellow student, he gave her chloroform, made a transverse slit under the mental foramen, as could be seen; and as the young lady said to me, "he scraped, and rasped, and I awoke very stupid, and he showed me some little bits of bone which he said was the tumour." At all events the swelling did not disappear, and being obliged to remove to Montreal, she was brought to my office by a lady friend. The second inferior bicuspid was badly decayed and had been very tender to the touch for some weeks before the above scientific operation. Extraction was clearly indicated; a large abscess clung to the apex of the fang, and pus was discharged into the mouth from the socket. In the course of a week she was cured, but has her face disfigured for life by the scar. Other cases where the cheek has been lanced externally for such swelling are not very rare. It is common too, to hear patients say that they were advised not have an ulcerated root extracted until the inflammation subsided. A little study into the pathology of the matter will prove all external operations, hot applications &c., to be wrong, and the retention of diseased roots or teeth to be the greatest impediment to cure. Hot applications over the seat of disease *in the mouth* are proper; but where there is any tendency of the pus to point externally, *cold* water, ice, &c., should be used to the outside of the face. I purpose referring more fully at another time, to the subject of alveolar abscess and its treatment.

## THE VARIOUS DISEASES OF THE DENTAL PULP AND THEIR TREATMENT.

BY G. O. FISET, D. D. S., QUEBEC CITY.

The dental pulp is one of the most delicate structures of the human organism. It is a highly vascular membrane, having a minute capillary net work, composed of the arterial and venous radicles, and of nervous filaments, supplied by arteries, veins, and nerves entering the apical foramina of the teeth; it is liable to disease like all other tissues, therefore, it is of the utmost importance to us as surgeons, to save the vital principle of that small organ, placed there by God to serve its purpose in the animal economy. It is in almost all cases in our power, and is also our duty to do so.

An abnormal condition of the pulp generally results from exposure to the action of the atmosphere and foreign substances, either caused by decay, mechanical violence or wearing, produced by the necessary friction of mastication; it occurs though rarely, without being exposed; its diseases can be diagnosed when the trouble is taken, and are, viz.: inflammation from dental irritation, congestion, acute inflammation, ulceration, polypus, fatty degeneration, and calcification.

Inflammation of the pulp, without being directly exposed, occurs in cases of exposure of the periphery of the dentinal tubes, either by wear, fracture or decay, which contain the dentinal fibrils, and by changes of temperature and contact with acids, sugars, &c., become irritated and in that way transmit inflammation to the pulp by their continual irritation, or it may also be the result of sympathetic irritability from some diseased tooth, or from cold. Symptoms. Pressure upon the exposed dentine with an instrument will cause a sharp decisive pain, which will last for the moment only, a heavy and strong pressure will not be more painful than a slight touch, and if any irritating substance comes in contact with the exposed surface, pain will be produced and will last for a short time; but when the pain is the result of sympathetic irritability it comes at intervals and is acute, lasting but a few minutes. Treatment. The affected part should be rubbed, each time the pain is felt, with bicarbonate of soda; but if the pain is produced by sympathetic irritability, the tooth causing the mischief should be treated. If the affection is the result of decay, the cavity should be filled immediately, being careful to

insert a non-conductor between the exposed surface of the dentine and the metal.

When a cavity is found in a tooth, and the process of decay has gone so far that the pulp is unprotected, it becomes irritated by its exposure to the air and substances of a foreign nature entering the cavity, which produce engorgement of the capillaries; we then have a state of congestion. Symptoms. A slight uneasy pain is felt, and if touched with an instrument the most excruciating pain is produced. Treatment. The pulp should be capped with with oxychloride of zinc; it is of no use to explain the process as it has been often done.

Acute inflammation follows congestion, caused by exudation of the serum of the blood, its symptoms being a throbbing and acute pain, recurring after a certain lapse of time, and is violent in its character. It may terminate in suppuration, causing periostitis, or ulceration may follow, according to the constitutional tendencies of a patient. The capping mode of treatment should be brought into requisition before suppuration takes place.

Ulceration is the result of continual irritation caused by the presence of some portion of disintegrated tooth structure, also by the pressure of particles of food upon the exposed surface of the pulp; it thereby acts by interrupting circulation and nutrition of the part. Symptoms. Intense darting pains from change of temperature and contact with foreign substances of an irritating character, which may be of long or short duration. Treatment. The same as in the two last named diseases.

Polypus is the name given to tumours enclosed in cavities, it is taken from the Greek *polus* many, *pous* a foot, and is supposed to resemble the radiated animal of that name. Polypus as it occurs in the pulp, is a fungus growth, protruding the edges of the chamber, in some cases filling nearly half of the cavity in a tooth, and is the result of ulceration; it gradually becomes elastic and spongy in its texture, and has a strong tendency to hemorrhage and secretes a fluid of a very offensive nature. Symptoms. No pain is felt when punctured or irritated by sucking, or otherwise—a profuse hemorrhage will be the result. Treatment. Apply an escharotic (acid carbolic) every twenty-four hours, covered with gutta percha until the tumour has been reduced to the aperture of the pulp chamber where it was originally exposed; the escharotic acts by promoting healthy granula-

tions; the pulp should then be capped with oxy-chloride of zinc, and the cavity filled permanently.

Fatty degeneration is a gradual disorganization of the pulp tissue caused by partial necrosis, as for example: when a pulp has been capped and a non-conductor not placed between the gold and pulp, heat and cold are conducted by the agency of the metal to the living tissue, causing devitalization by the sudden shocks of temperature, as a consequence a separation of the elements takes place, which is fatty degeneration. This explains why a tooth will often decay to the fangs without the least sensation of pain being felt by the patient. Symptoms. Irritation of the tooth by pressure upon the soft parts, but the gums are not inflamed. When such is the case, the pulp chamber should be opened as soon as discovered, it will be found to contain a fluid resembling pus, filled with small fatty globules, which are the products of degeneration and emits a very offensive odor, caused, probably, by the gases that were generated from the disintegration. Treatment. The treatment should be, of course, antiseptic; after removing as far as possible, all the disintegrated pulp substance from the chamber and canal, applications of the saturated solution of iodine in creasote or carbolic acid, (which is quicker in its action than the former), should be made and repeated every twenty-four hours, until there is no more of that putrid odor left.

Calcification occurs either with or without exposure, and by the wearing of the tooth by mastication; in the the two latter cases it is found principally in persons of old age. In calcification, the recuperative power of the \* germinal matter of the peripheral cells becomes lost as age advances, it is thereby converted into formed material, which becomes fused together and hardened by the deposition of calcareous salts. This explains why a pulp gradually becomes smaller and calcified as a person gets older.

Calcification is also produced in young subjects in the same manner. If we find a pulp slightly exposed in young patients, and inflammatory action has not yet set in, or if it should become accidentally exposed while excavating, by capping it with gutta percha or Hill's stopping, temporarily for a year or more, a layer of osteo-dentine as it is called, will be found in a number of cases on removing the filling; not always, as it greatly depends upon the constitution of the individual at that age. Osteo-dentine does not resemble nat-

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\* Germinal matter, as called by Beale, corresponds to the nucleolus and nucleus of Virchow's cell, while his formed material corresponds to the last named author's cell contents and cell wall.

ural dentine, being of a yellow semi-transparent color, and is somewhat of a harder texture.

I have endeavoured to give, as briefly as possible, an explanation of the various diseases to which the pulp is subject, and their treatment, which I hope will find a place in your valuable journal.

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## REPAIRING RUBBER WORK.

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BY A. C. COGSWELL, D. D. S.

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It often becomes necessary to repair parts of sets, either upper or under, of vulcanite rubber, which in many cases can be done quite readily without the trouble of taking a new impression.

If an under set, on which only the bicuspid and molars have been placed, and which necessitates the rubber on the lingual surface back of the neck of the incisors and cuspids, has become broken, by carefully securing the two parts by means of gutta percha or wax—so as to assume its original shape—it may then be placed in plaster and flaked as for any case; after hardening and removing the upper part so as to explore the inner portion of the rubber and wax, then take an instrument shaped like a chisel and cut away carefully all that portion of the rubber between the bicuspid on each side of the plate. A little caution may be used in cutting at each angle, say back of where the incisors would come when the plate is in the mouth, not to allow the instrument to slip and cut away the plaster, but carefully separating this centre-piece, remove it entirely, then drill and expose the pins of the first bicuspid, and bevel the edges of the plate so as to allow the new rubber to become securely attached to the old, which may be made even more safe by drilling holes in the edges of the old plate. When properly packed and vulcanized, it has all the advantages of a new plate, as it is tough and elastic, and not as clumsy or even so liable to break as if all the older part had remained and the new placed over it. The same can be done for any part of a set, or even all the rubber may be removed in some cases, by heating, and allowing the teeth to remain, pack and vulcanize as usual. This method often saves a deal of time and labour, and as time is money, 'tis well to economize.

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PROCEEDINGS OF SOCIETIES.

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## AMERICAN DENTAL ASSOCIATION.

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OPERATIVE DENTISTRY.

Dr. Corydon Palmer presented enlarged drawings of the superior and inferior dental arches, representing the ridges, cusps, pits, and fissures in the teeth, all of which were scientifically designated. He said each of the teeth followed a certain type, which is invariable; and the object of these drawings was to point out the probable lines of decay, and the necessary reparative treatment. The drawings were followed by plaster models; the first, a cast from an impression of a particular mouth as it was, indicating the points of decay; next, a similar cast, showing the cavities as prepared for filling; and a third cast, with the operations completed. A number of large and beautifully executed plaster models were then exhibited, showing similar operations on a larger scale, and exemplifying his manner of wedging. He prefers locust wedges, because they neither absorb moisture nor slip; of these he uses three, one at the cutting edge or summit of the tooth, to be used first, and the space thus obtained to be secured by a wedge driven at the neck, and also a thin wedge to protect the gum. In driving wedges at the cutting edges of incisors, they should be set perpendicularly instead of horizontally, to guard against fracture of frail teeth. To protect from moisture, it was of great service to introduce a wedge from within the arch in addition to the one from without. Attention being called to the accuracy of the casts, it was stated that the impressions were taken in gutta-percha, which was allowed to harden slightly before removal from the mouth. In answer to a question, whether any of the pulps were exposed, and, if so, how treated, it was replied, that there was one exposed pulp, which was treated with carbolic acid, capped with Hill's stopping, and filled with gold; as far as could be judged, the treatment was successful.

Dr. Jesse Perkins at this point presented a case of loss of the inferior maxilla from phosphor-necrosis, with consequent retraction of the soft parts. Drs. Atkinson and Taft were requested to examine the case. They reported that the whole of the lower jaw was lost, and that an artificial appliance could only be made available by very gradual steps.

Dr. Allport gave some particulars of a surgical operation, where the bone forming the chin being removed, and the cut extremities approximating, he distended the parts gradually to their normal position by mechanical appliances, and then introduced a permanent artificial substitute.

Dr. Atkinson said it was happy for the dental surgeon that the territory with which he had to do was so capable of being interfered with ; and the rule to be observed, wherever imperfection exists, is to cut down with chisel and file to a healthy basis, saturate with creasote, and restore the exact contour of the lost or undeveloped parts. In ninety-nine per cent. of children's six-year molars there will be work to do. When a patient is presented, the first requirement is a correct diagnosis and a clear statement of the case, which should be given without regard to the chances of losing the operation. An imperfect diagnosis insures imperfect work. Cleaning the teeth is a matter of the first importance ; if they are well developed and sound, see that the ligaments around them are all right, and carefully remove every particle of foreign matter deposited upon the necks and roots.

Question. When would you extract a tooth ?

Dr. Atkinson. When I would bury a man,—when he is dead. The tooth is not dead when the pulp is dead, nor when it is extirpated, for the cement continues to receive pabulum through the periosteum until the connection is entirely separated. This indicates the position we should assume. He wondered that people had not anathematized the dental profession for all they had suffered from it ; and but for hope of better things, which is always springing up in the human breast, we should all have been given over to nitrous oxide and the forceps. After finding the mischief, the next thing is to overcome it ; and to do this use No. 20 foil, and a lead mallet of six to eight ounces ; with these the work can be done easily.

Question. Can you save every case where the pulp is dead, or where there is a discharge from the socket of the tooth ?

Dr. Atkinson. Yes, within my limits. A man is not dead until he is resolved back into his ultimates. Wherever there is a discharge, be sure there is life, which is trying to get rid of the diseased condition. The discharge of matter from the gums is due chiefly to the mode of brushing them *from* the teeth, which spoils their attachment. In such a case remove all foreign matter from the root, be it more or less, and inject carefully, with a hypodermic syringe, a drop

or two of the solution of the chloride of zinc, of the strength of 480 grains to the ounce of water, sufficient only to bathe all the parts where it is desirable to obtain an attachment ; thus a coagulated substance from the juices of the flesh is obtained, and the attachment will in time be secured. Failure, after such treatment, may be set down as the result of an imperfect performance.

Dr. Wetherbee. Is an extracted tooth dead ?

Dr. Atkinson. The pulp is dead very soon, but the dentine, from its analogy to the vegetable kingdom, requires a longer period, while the enamel is only killed by chemical solution.

Dr. Wetherbee. Should not those who extract teeth, then, be indicted ?

Dr. Atkinson. "Let him who is without sin cast the first stone."

Dr. Wetherbee. We want to cease using the term "fang ;" it is used by medical writers, but they are no authority for us. When a tooth has lost its attachments, is it alive ?

Dr. Atkinson. So far as it is attached.

Dr. Wetherbee. Then, when it is nine-tenths detached, is it nine-tenths dead ?

Dr. Atkinson. No.

Dr. Wetherbee proceeded to say that when the soft solids are devitalized, and the attachments lost, the tooth is dead. Total calcification is death. He objected to Dr. Palmer's preparation of cavities in the first superior molars ; he considered the transverse ridge a weak point, which should be cut away ; he also objected to there being two cavities made in the posterior part of the tooth,—durability should be the only consideration. In the bicuspid, where there were two depressions and a fissure, he would cut from the posterior cavity forward to the anterior fissure.

Dr. Palmer explained that the cavities were done in both ways, according to the indications.

Dr. Crouse said that, after treating alveolar abscess, he thinks it best to use a temporary filling instead of inserting gold at once. He objected to quick wedging as unnecessarily painful ; wedges of pine wood, used gradually, were much more desirable ; a member present had his central incisors permanently separated by quick wedging. He was also opposed to the method of filling bicuspid, so that they would come in contact after the removal of the wedges ; this, in his opinion, would ensure fresh decay. He disliked the angles in the cavities as prepared by Dr. Palmer in his models ; he considered them

much more difficult of filling, and insecure when filled, than if the points left projecting into the main fissure had been cut away. He also objected to the use of such heavy foil as No. 14, 15, or 20; he would prefer No. 2, 3, or 4. He thought it not best to attempt to confine any one to one kind of foil any more than to one kind of instrument. He believed in not having foil too adhesive, and in using soft foil over the edges of enamel, with hand-pressure or with the mallet. In retaining points he would use a piece of gold partially annealed.

Dr. Wetherbee said wedges were safe in skilful hands; they might be severe, but not half so severe as the use of rubber; the soreness caused by the rubber was ten times a greater objection to its use than that of the wedge. All the separation necessary, even in the smallest cavities between the front teeth, is such as to allow the passage of the thinnest file; with properly formed instruments he obtained any more room which he needed from the palatal surface. Comparing his practice of twenty years ago with that of to-day, he was sure there was less suffering from the quick wedge than from the rubber.

Dr. Thomas was opposed to quick wedging from personal experience; he had been made to suffer more in that way than he would ever inflict upon one of his patients. Next to the wedge of hard wood driven quickly, came rubber; he was opposed to that also; it is fearfully expansive. He needs more room for operating than would merely allow the passage of a thin file, and to secure this with the least possible pain, he uses cotton, which in a little time secures space. He narrated an instance of heroic wedging, which occurred in a certain dental society, which resulted in splitting off the lateral incisor.

Dr. Woolworth rose to say that he agreed fully with the views of the last speaker.

Mr. McDonnell announced himself as a champion of quick-wedging; he had never split the alveolus nor done any other damage; but admitting such things to have happened, they were no more an argument against wedging than similar occurrences in extracting; all his experience was opposed to slow wedging. He considered contour fillings indispensable, and covered all exposed dentine and parts of enamel that had been cut with gold. He did not like the file for cutting out fissures; never used it except for cutting away enamel that should not be left.

Dr. Morgan assumed that enamel is a living tissue, and as a portion of it is composed of animal matter, it must be subject to wear and re-placement in common with the osseous tissues. That this is so, appears from the fact that enamel deprived of its subjacent dentine ultimately breaks down from lack of nutrition, though this result may be very slow of attainment. It was very necessary to pay proper attention to children's temporary teeth; in the sixth-year molars, in adults, he found about one in forty that needed no operations. Cleansing teeth was another matter that could not be too carefully attended to; he thought he had never thoroughly cleansed a bad set of teeth in his life, and he had never seen it done by any one else. He would add his testimony that the vitality of a tooth is never lost as long as there is any adhesion of the periosteum; when entirely dead, nature throws it off. He could not agree with a former speaker that the transverse ridge should always be cut out; there were cases where this should be done, but it was by no means the rule; on the contrary, the rule should be to cut off as far as the decay reached, but not a hair's breadth farther. It was desirable to retain as much of the solid substance of the tooth as possible; but if a part was burrowed under, or there was doubt of its strength, it should be cut away. It had been assumed that in bicuspidis all the fissures should be cut out; this might be necessary in many cases, but he thought it wrong where the cusps are short and the enamel strong; he protested against the idea that gold is better than sound tooth substance. The proposition to cut away the sides of the cusps to correspond with the size of the neck would ruin the teeth in many cases; it is only admissable so far as may be necessary to cover the exposed dentine. He did not think it practicable to cover the edge of enamel at the cervical wall of the tooth, if beveled; there would always be sufficient leakage between the enamel and dentine to destroy the latter.

Dr. Palmer said that a retaining pit was, of all others, the place where adhesive foil should be used; he did not round the corners of the enamel; he wanted them as square as he could get them.

Dr. Wetherbee opposed beveling; he removes the feather edge of the enamel with a watchmaker's file. He objected to preparing cavities by following out all the fissures; it was but once in fifty times that this is necessary. He would rather cut off the angles, throwing the cavity into one; nothing is gained by leaving these ridges; the tooth is stronger without than with them. The operation should al-

ways be done in the best manner, irrespective of other considerations.

Dr. Crouse would agree with Dr. Wetherbee as to the manner of opening cavities, but not on wedging; quick wedging is a heroic kind of practice, and dangerous. He denied cutting away the bicuspid in the matter charged; he would cut sufficiently to preserve a proper space between the teeth to keep them clean. Filling fine retaining points is about the most difficult part of an operation. He maintained his views in regard to soft foil, and predicted a greater use of it than ever.

Dr. Mills pursues quick wedging as a means of saving his patients from more painful operations. He agreed in removing the feather edge from enamel by using a fine file. Cleaning teeth was a subject of the greatest importance, and one to which he had devoted his best efforts; very few, he was persuaded, had any adequate idea of what was meant by the expression; it was not merely to take away the portions of tartar that might be conveniently reached, but to remove every particle of foreign substance on any part of the tooth.

Dr. McQuillen said: My experience as a teacher has convinced me that students can be taught in a few months to fill a tooth in a highly creditable and skilful manner. It is not enough, however, to know How to do! but What to do! and When to do! This implies a thorough knowledge of the cause of trouble; and it demands a devotion of years to acquire that thorough knowledge of the principles and practice of the profession, combined with the constant and daily application of these, which can enable a practitioner to diagnose promptly and correctly the varied and complicated cases occurring in practice, or upon which the medical man may desire an opinion in consultation. Even with the most careful training, few manifest this faculty in a high degree, apparently only those who have been endowed by nature with peculiar gifts, like the divine afflatus of the poet. What is it in the justly eminent physician, surgeon, or dentist which secures the confidence and respect alike of the community and the profession? Is it the fertility and inexhaustible resources manifested by the physician in his prescriptions, or the facility with which the surgeon amputates a limb or extirpates a tumor, or the dexterity and skill displayed by the dentist in the performance of his operations? These qualities are frequently manifested by men who make but a slight impression on the world; but when they are combined with the possession of diagnostic powers of a high order, a master-mind is recognized and respected as such. While few can

occupy such an elevated field of usefulness, all should endeavor to develop to the fullest extent the perceptive and reasoning faculties which have been granted to them, for it is through the constant exercise of these that the ability to diagnose correctly depends. In applying these principles to the practice of dentistry, reference was made to the necessity of employing the finest probe (possessing flexibility and toughness) in the examination of the teeth, so as to discover those minute openings in the enamel which frequently lead into cavities of the largest size. The prevalence of symmetrical disease in the teeth, and the more than probable supposition that when a tooth was found decayed on one side the corresponding one on the opposite side would prove to be in the same condition, was dwelt upon as a matter of decided moment to bear in remembrance.

Dr. Butler spoke of the care necessary in examining cases ; it can only be properly done with fine probes, and silk thread, and wedges. It is proper and necessary that a fee should be charged for such examinations, as is the custom among physicians. As remarked by a previous speaker, it is impossible that the result of a defective diagnosis can be otherwise than unsatisfactory.

#### DENTAL HISTOLOGY

Dr. McQuillen said that, as Chairman of the Committee on Dental Histology, he had no written report to offer but in place of one would make a verbal statement of some of the work which had recently engaged his attention—the injection of the pulps of calves' teeth, a number of preparations of which he had brought with him, and would exhibit to the members under the microscope. The subject was one which he had been compelled to work out for himself, as he could not find any account, in the works which he had access to, of the method to be pursued, except such as applied to other organs—the liver, kidneys, etc. Having made an injection of a kidney, and mounted microscopical sections of it, which had been well thought of by several professional friends, he concluded to try a new field, in which, after a number of unsuccessful efforts, he had obtained the results which would be shown, as follows : procuring a calf's head at the market-house, the external carotid artery (which gives off a branch, the internal maxillary, supplying the teeth with blood-vessels) was sought for and found, after some trouble, owing to the contraction and retraction of the muscular coat of the artery, burying it in the surrounding soft parts ; the detached nozzle of the injecting pipe was then introduced into the mouth of the artery and securely tied

around it, and the calf's head placed in a pan of warm water, not so full as to cover the nozzle of the syringe, and just hot enough to bear the hand of the operator without discomfort. In the mean time a bottle containing Dr. Carter's carmine injecting fluid had been placed in water of the same temperature, and the syringe treated in the same manner. After the head had been in the water about ten minutes the syringe was filled with the coloring fluid, and the latter slowly and gradually injected into the vessels, great care being exercised not to allow any air to be in the nozzle of the syringe, as this would be forced into the vessels, and prevent the injection. On completing the injection, the head was removed from the water and set away in a cool place for an hour or so, when the incisors and some of the molars were extracted with ordinary forceps, and the teeth split open so as to expose the pulps. The latter were only found adherent to the walls of the pulp cavity at the extremity of the roots, where the process of growth was progressing most rapidly. At this point the adhesion was so firm as to require considerable force to sever the connection. The pulps were then placed in a preservative fluid, composed of Bower's glycerin, one ounce, strong acetic acid, five drops, and allowed to remain in it for a few days, when they were mounted in glycerin jelly on glass slides, the thin glass cover being secured by a ring of white cement around the edges. The results obtained would be seen under the microscope to present a rich plexus of minute vessels branching off from a number of larger ones, and these again being derived from the main artery of the pulp. In addition to this, projecting from the sides of the pulp, would be observed the dentinal fibrils of Tomes.

In bringing this subject before the Association, the speaker said it was merely introductory to a series of investigations which he proposed to enter upon in relation to the histology of the dental pulp in the three stages of dentition—follicular, saccular, and eruptive. The observations of Goodsir were of incalculable value in this direction, but it should be remembered that his work was accomplished without the aid of the microscope, and the employment of that instrument would no doubt reveal some new facts in this interesting field; and although something had been done by European microscopists, there yet remained ample room and verge enough for others.

Attention was directed to the obligations resting upon dental practitioners to do their part in contributing to science, and thus relieve the profession in America from the well-founded charge of being

dependent upon European investigators for their knowledge of dental histology. The advantages and opportunities enjoyed by European investigators were contrasted with the difficulties surrounding such efforts in America; yet it was contended that there was no reason why rich results should not be obtained here, by those who would devote themselves untiringly to scientific investigations. The only way to gain knowledge, in new and unexplored fields, is to keep trying; even though blundering ever and anon. Persistence in such efforts frequently yields results gratifying to the investigator, surprising to the world, and constituting a valuable addition to the annals of science.

In addition to the specimens of pulps, he exhibited some sections of an injected sheep's kidney, showing the Malpighian corpuscles; also a number of preparations made within the last six months illustrative of that terrible disease, trichiniasis, which is either more generally recognized or fearfully on the increase in America. The former supposition was the most probable, and many cases of death, with the cause shrouded in obscurity, have been doubtless due to the presence of these horrible parasites. The specimens were: No. 1. A woman who died in the Philadelphia Hospital last winter; showing the trichina inclosed in cysts. No. 2. A young girl who died in Clay City, Illinois, with the trichina very numerous, unencysted, and in migratory condition. No. 3. A woman who died in Elgin, Ill., with the trichina very numerous and coiled up, apparently preparatory to becoming encysted. Judging from the presence of large quantities of oil globules, the muscular tissue had apparently undergone fatty degeneration. No. 4. A portion of pork containing trichina eaten by the person from whom the preceding specimen had been taken. The trichina, although not very abundant in the pork, were well marked. As a series of specimens, these preparations were very valuable, particularly for educational purposes, in showing the parasite in various conditions, and in the fact that the last two specimens bore the relation of cause and effect, in the development of the disease of which the person died.

Dr. Atkinson said the European scientists were so near to one another that they had to confine themselves to a single tissue in order to avoid collisions; and they spent a whole lifetime in following up one train of investigation. It is the prevailing habit of Americans to spread their investigations over so large a field as to be necessarily superficial; and therefore foreign opinion could not be very compli-

mentary to the Yankees. He was not distressed because they would not receive experiments by us as conclusive. He had been largely occupied of late with experiments in the development of the hen's egg into the chick, by which he had been fully convinced that the only difference between the white and the red corpuscles is in the coloring material, which is formed in the egg before either the corpuscles or the vessels. The young corpuscles are arranged in tracts, without walls ; simple germinal matter, which the best powers of the microscope cannot reduce into individual bodies ; mere flocculent masses originating on the border of the yelk. The blood corpuscles are seed bodies from which all tissues arise ; the origin of any planetary body cannot be presented to the physical sense, but only to the intellect. In our present condition our minds are divided just as the molecules are when they become sick. Irritation is the first disturbance of nutrient action ; aberrant nutrient action may be spent or neutralized, or compromised and further sickened. White corpuscles are designed for the formation of white tissues, and are the embryos of the red corpuscles, whose mission is the formation of red tissues and the conveyance of oxygen to the various cell territories. He thanked God for the invention of the microscope ; its revealments are the platform on which all operations on the human body should be based. Histogeny is the alphabet of all medical science, and without it there can be only bungling spelling.

Dr. Judd said there was a great deal more of danger from the trichina disease than was generally supposed. He had examined, under the microscope, specimens from six subjects which lay side by side in the dissecting-room last winter, without any reference to the disease by which they had died, and of these six he found trichina in three. He believed many deaths occurred from trichina which were set down to other diseases.

It is a common idea with histologists that there is no difference between one cell and another, that of an elephant, or of an oak, for example, or between the ovum of an elephant and the ovum of man ; yet there is a vast difference, which might be denominated *potentiality*, or the power by which one was formed into an elephant and the other man. According to one theory, the difference is developed by circumstances ; he believed that the cell of an elephant contained the potentiality of an elephant. In his own observations of cells, they showed regular and persistent currents, as distinct as those of the Gulf Stream ; these currents being alike in similar species, but differ-

ent in others, so that he had hope, by simple examination of a cell, to discover its potentiality. Similar observations have been made by distinguished Russian scientists.

Dr. McQuillen. The reproduction of organic beings is effected by one of two methods,—the *asexual* or the *sexual*. Illustrations of the first are presented in the “budding” of plants, and in the lower forms of animal life, as the polypus, for instance. These “buddings” becoming detached constitute new beings. Sexual reproduction, on the other hand, implies male and female parents, the first furnishing the spermatozoa, and the last the ovum, or egg, among animals; while in the vegetable kingdom, the first supply the pollen-grain, or autheroid, and the last the ovule or seed. The direct union of the spermatozoa and the ovum is indispensable to the development of a new being, neither of them alone having the power of assuming the form of the parent. When examined under the microscope, the ovum of one animal resembles so closely the ova of other animals that it is impossible to distinguish any difference between them; yet that there is a specific tendency for each to grow in the resemblance of its parents, no one would pretend to deny; and in applying the term *Atavism* to this property, it conveys the same idea as *potentiality*, for it means the tendency of like to produce like. It should be remembered, however, that in addition to this, there is also a tendency to *variation*, by which the offspring, although resembling their parents in many particulars, yet differ from them in other respects; and that in some instances the difference is so great as to destroy all resemblance. This tendency to *variation* may not produce important modifications of form in all the living beings under the observation of man, in the limited period granted him to make his investigations, but in the lapse of ages, and with changing *conditions of existence*, it may be attended by alterations of the most important and wonderful character in the *progressive development of species*.

It is natural that the majority of those who had been taught to regard the origin of species as taking place by special creations, and who esteem it as an article of faith, should oppose such views, as it is but a repetition of the experience of the past in the progress of science. Men generally cling firmly and fondly to old and cherished opinions; and there is such a tendency to fossilization, on the part of the old and middle-aged, that but for the efforts and support of independent thinkers, and the fact that the plastic minds of the young are ever ready to receive new truths, there would be no advancement

in science, the arts, or in letters. Society, ever and anon, grows too large for its old clothes or ideas. The serpent, the lobster, the crab, indeed all animals, man not even excepted, are constantly throwing off the old integuments, some slowly and gradually, scale by scale, while others cast the skin or shell entire, when no longer serving a useful purpose. Martin Luther and his confreres, theological and scientific, succeeded in bursting through and casting a pretty large, thick, and tough skin in the Reformation; men of science are engaged upon one in the present age, quite as difficult to rend; and as Prof. Huxley remarks, "every good citizen must feel bound to facilitate the progress, and, even if he have nothing but a scalpel to work withal, to ease the cracking integument to the best of his ability;" or, as one might add, increase the gap with the investigations and revelations of the microscope.

It is a source of congratulation, as an evidence of growing liberality, that such subjects can be discussed without that manifestation of bitter opposition and feeling, and an indulgence in personalities, too often evoked. If those who favor the theory of the *progressive development of species* are in error, the best way to convince them of their mistake is by calm, dispassionate argument, and the presentation of incontrovertible evidence, rather than to denounce them for entertaining views which they may have erred in accepting, but yet honestly infer to be at least reasonable suppositions, if not fully proven.—*Dental Cosmos*.

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#### HEAVY FOILS.

Report of a Discussion on Heavy Foils, at a Meeting of the Saint Louis Dental Society, Held on the Second Tuesday of November, at the Office of Dr. PORRE, and Reported by him.

Dr. Eames—Said that he was only prepared to report in reference to No. 20 of the heavy foils, as he had not yet used any of the other numbers. Expressed himself highly gratified with results. Had experimented with alternate layers of No. 20 and the lighter Nos., and proved conclusively that it was softer, more adhesive, the weld more perfect, that it made a better finish and was manipulated with greater ease and facility than any of the lighter foils.

Dr. Forbes—Said the important object was to produce perfect fil-

lings, and that in his opinion, if the gold, whatever the No., was driven well to the walls and margins, it was not so materially important to have the centre of the filling so hard. He had not used the heavy foils; could not understand why a ribbon could not be made of any required thickness or weight, by folding a sheet, or laying together a number of sheets of the lighter foils, and cutting off strips to suit, that would answer a better purpose than the heavy Nos. spoken of,—that would be more easily and perfectly adapted to walls of the cavities, and altogether make as solid a filling. He did not doubt but that the heavy foils might be an improvement in building up, but could not agree, though in the absence of experience, that they can be used in filling a deep cavity or under cut cavity, as well as the less Nos.

Dr. Judd—Said that he was using Nos. 20 to 60: that he had really encountered less difficulty than he anticipated; consequently was prepared to give his testimony in behalf of heavy foils. He stated that he had used the different Nos. with a great deal of care and patience, noting every peculiarity that each one presented under manipulation, that his conclusions might be satisfactory. A test of No. 20, under experiment, had proven that a conformity to the walls of the cavity was perfect, also that the weld and solidity of the filling far exceeded any of the less Nos. He observed that he did not use any one No. exclusively in filling a cavity, that in some cases he used several different Nos. Expressed a decided partiality for No. 60 for the margins of cavities, and for finishing. Used No. 60 for contour fillings; thought he could make a better filling than with a less No. If an approximal cavity, he used Morgan's gold for a foundation or anchorage, and then with narrow strips  $\frac{1}{4}$  inch or more in length, proceeded to fill; if a point on either border was broken away, he had no difficulty in building out to required fullness. If a crown was to be restored, he first made a level foundation and then with pieces of foil, size of surface, proceeded to weld layer upon layer; upon finishing, he stated that he had no fear of displacing the filling. Could chisel and file with impunity. His argument was that No. 60 required less force to make a perfect weld, than the same thickness made of folds of any of the less Nos., for reason that, in proportion as the foil was reduced in thickness, it was increased in density, therefore more difficult to weld. He stated, as a fact, that he could use upon No. 60 smaller points, without slipping, than upon any of the less Nos.

Dr. Chase—Had only used No. 20 of the heavy foils; had tried it in a cavity of an incisor of very delicate walls, with satisfactory results; made a good filling; he attested to its superiority in such cavities over the smaller Nos., for reason that it really took less force to weld, and that it could be conveyed to place with less difficulty, and, too, without injury to the foil, which is sometimes the case with the smaller Nos. in whatever form they might be used. He cuts in strips  $\frac{1}{8}$  inch wide and  $\frac{1}{2}$  inch long, making foundation or anchorage with ammoniated foil, then welds one end of strips, and folds over and over, welding each layer as he proceeds; when a broken wall was to be restored to contour, he was convinced heavy foil subserved the purpose best, was more tractable under manipulation, made a more solid and better welded filling.

Dr. J. B. Morrison—Had filled but two cavities with No. 20; used strips  $\frac{1}{8}$  inch wide and  $\frac{1}{4}$  inch long; succeeded in making very fair fillings, but was not satisfied with the heavy foil, with his small experience. Took issue with Dr. Judd upon the statement that it took greater force to weld an equal thickness of the smaller Nos. of foil.

Dr. Prince—Had not used the heavy foils.

Dr. A. W. Morrison—Had not tried the heavy foils, but was ready to adopt them in practice if proved superior to present Nos.

Dr. W. N. Morrison—Had a very limited experience in the manipulation of the heavy foils; was therefore, not prepared to give an opinion; was disposed to believe that they would not supersede the smaller Nos. in filling deep cavities, &c.—*Missouri Dental Journal*.

## SELECTED ARTICLES.

### SENSITIVE DENTINE.

BY J. BROCKWAY, ALBANY, NEW YORK.

DENTINE, a term of recent adoption, supplies a want, and I shall use it to designate that portion of a tooth formerly, though not pertinently, called bone or ivory.

The old physiologists divide a tooth into three parts: the crown, the neck, the root. I shall devote this article to the crown, and for my present purpose will divide that into [five parts: enamel, membrane, dentine, pulp, nerves; or, in other words, the vitreous, membranous, osseous, pulpous, and nervous, disregarding the venous.

Both enamel and dentine—like bone, ivory, horn, shell, hair, and

the epidermis of the skin—have much the same analysis, being substantially lime-salts, phosphate, and carbonate. Yet as they materially differ from each other, they more widely differ from their kindred bone, horn, etc. They differ from bone and horn alike, in that neither enamel nor dentine are capable of growth or extension, after their form is once complete. Nor do they differ less in their formation, habits, and diseases,—but I shall devote this article chiefly to that difference in their organism which renders the one sensitive and the other not. Enamel is generally regarded as an unorganized vitreous deposit, and in that respect like shell; but dentine in its normal state is supplied with a delicate and highly sensitive organism. And yet the dentine or osseous portion of the tooth is no more sensitive than hair, horn, or nails; though in speaking of *sensitive* dentine we include the organs of sensation, the nerves and the membrane, whose entire web, warp, and woof is nerve fibrils. But my reasons for speaking of them as distinct and separate parts will be obvious as I proceed. I will then first state what I wish very briefly to demonstrate.

First, enamel as a vitreous, insensitive deposit; second, the membrane which lines and unites the enamel to the dentine is but a web woven of the attenuated nerve fibrils; third, that nerves ramifying or traversing the dentine are lateral branches, which put off from the main nerve that passes in at the point of the root, running through the pulp and dentine, the whole length of the tooth; fourth, that dentine, when those nerves are encised, is insensitive; and fifth, that the cutting off of the principal nerve destroys the sensibility of all the dentine below it. The main nerve has some likeness to the top root of certain vegetables, with their lateral branches and attenuated fibres.

It is questioned whether ultimate fibrils have ever been seen. Probably *not* singly; but the membrane covering dentine, as does the membrane the white of an egg, was, thirty years ago, dissected and made visible to the naked eye by Dr. Hayden, of Baltimore; and this, as I suppose, is nothing else than the most attenuated ultimate nerve fibrils. This membrane too is often denuded in the living tooth, but is better discerned by the touch than by the eye. The dead tooth is the better subject for dissection. This sometimes, needs but to be thoroughly dried, or at most slightly heated, to scale the enamel from the membrane and the membrane from the dentine. But as the main branches of the great

central nerve are scarcely visible under the microscope, we are obliged to feel after their more minute fibrils.

That the entire surface of denuded dentine is covered with the most delicate and sensitive nerves is but too palpable to the dental operator and his patient; no part of such surface can be touched with the sharpest point without finding evidence of the presence of a living, active nerve, capable of communicating with the brain with electric speed; and, no doubt, the interruption is attested by a whole company of those dental guards, ever ready to raise the war-cry against violence from acids or instruments.

That the dentine itself is not alike sensitive at every point is equally assured by the testimony of the senses. When by any means the enamel is abraded, the denuded membrane will be sensitive at *every point*; but we have only to circumcise or cauterize the denuded spot, and the dentine may be touched or excavated without pain. Here, then, we have demonstration that the lateral nerves, passing from the main central nerve, are few and far between, compared with the multitude of fibres that enter and compose the membrane.

But still another evidence: in case of decomposition of dentine, or incipient or deep and extensive decay, it will be found that, unless the pulp is exposed, the walls of the cavity may be explored and thoroughly excavated with little or no pain, except as the instrument comes in contact with the membrane and under surface of the enamel; or, as is often the case, there will be one or more points in the cavity less decayed than the surrounding parts. These are always the most vital points—vitality resists chemical action and decomposition of dentine. These sensitive spots, then, are made up, to a greater extent than the surrounding substance, of dentinal fibre, or it is at these points that the main branch nerve enters. These spots need only to be incised near the enamel to destroy sensation.

In support of the theory that the central nerve throws off branches laterally terminating with innumerable fibrils in the membrane, I mention one other fact which seems conclusive: cut off the longitudinal nerve, and all below is insensible. 'Cut or fracture this at the point of the root, and the whole tooth is insensible; divide or cut it off at the neck of the root, and every nerve fibril in the crown is paralyzed; perforate the centre of an incisor tooth, and just so far as the drill is carried is the dentine rendered insensible. Ordinarily, an incisor tooth, in a person of

forty, may be drilled from the cutting point nearly an eighth of an inch without reaching the pulp,—then, just so far may the crown be *filed* without feeling. And in the case of dwarf teeth, which are usually without any pulp or visible blood-vessels, the centre being perforated, the entire dentine is insensible to the file. And here, let me observe, nerves are not always accompanied with blood-vessels.

There are four classes of teeth where nerves are found, but no blood-vessels or capillaries.

The first class consists of nearly all dwarf teeth and supernumeraries (generally dwarfed); these, very soon after development, will be found without pulp or blood-vessels.

Although not entirely nerveless, the dens sapientiæ are often of this class, as well as malformed and dwarfed lateral incisors.

To the second class belong the teeth of old persons when the pulp, always pregnant with dentine, has perfected deliverance, exhausted itself and is no more.

Of the third class are the teeth whose crowns are worn up, and having excited both the exhaustive energies and the recuperative action of the pulp, have filled the natural pulp-canal with dentine, leaving only a still sensitive nerve.

The fourth, and less common class, comprises the teeth where tartar has insinuated itself quite to the point of the root, exciting the capillaries to hasten their work and retire.

So far as my observation, in a practice of fifty years, has gone, these are the only cases that furnish grounds for the remarks of Professor McQuillen on "Calcification of Dental Pulp," in the October number (1868) of the DENTAL COSMOS. That nature intends the ultimate entire conversion of pulp to dentine is attested, not only by the four classes of cases alluded to, but by her invariable habit of yielding the substance of the pulp to the supply of dentine in our cattle and sheep as they fill up the allotted term of life.

And for the evidence of nature's handiwork in this life, one needs but to examine the teeth of cows past the age of twelve years; what remains of the pulp canal not worn up, will be found filled with dentine. It is not singular that in the work of converting its own substance into dentine, the energies of the pulp should sometimes be overtaxed, and its action become spasmodic, resulting in the formation of incoherent nodules, and in protracted pain, culminating

in inflammation and ulceration at the point of the tooth, already destitute of any vitalizing organism. The prognosis of this disease is not often difficult; the treatment, either longitudinal or alveolar drilling.

But as I must close this paper, suffice it to say, sensitive dentine depends upon a principal longitudinal nerve, extending near to the biting surface, and either putting off through its entire surface lateral branches, or near its surface dividing itself and spreading into the web which constitutes the investing membrane; and hence, the most sensitive portion of dentine is in the crown of the main and central nerve, or in the membrane which is the terminus and general depot of these telegraphic fibrils.

And now for the practical lesson: cutting off the principal or the lateral nerves destroys sensibility in the dentine, but does not necessarily prevent toothache, as this is often a consequence of inflamed periosteum. But this article is intended chiefly to show the mode of treatment of sensitive cavities. This theory seems to account for the points which, though occult, are obvious to the experienced operator, that cavities in teeth are usually most sensitive and supplied with nerves at the union of the dentine with the enamel, and hence, the best obtunder of pain is a well-tempered, sharp incising instrument; the patient being advised that the cause of sensation is the existence of inconceivably minute nerves, that need only to be cut to be cured. But in many cases the sensibility centres in one or more nodules, which being incised, unnerves the entire surface. Still it is advisable, ordinarily, with a properly-guarded and firm hand, not only to incise the sensitive nodule, but, as nearly as possible, at one stroke to circumscribe the entire cavity.

That this is the safest and best way of disposing of the sensitive portion of superficial caries, without the use of chemical or acrid agents, has the testimony of fifty years' experience.—*Dental Cosmos*.

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#### CAPPING EXPOSED PULPS.

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BY A. O. RAWLS.

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[Read before the Indiana State Dental Association.]

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The delicacy of this operation must be apparent if we but note the fact that the Dental pulp is one among the most highly organized structures of our body, and responds to morbid influence through the

medium of the most sensitive nerve of the entire nervous system. Besides the difficulties arising out of those conditions, it is enclosed within a wall of solid, unyielding bone, the resistance of which would prove quite an impediment to success, should the operation be performed in a rude, bungling manner, or at a time when inflammation was too great to admit of the probability of its being overcome in the natural way of vital resistance and recuperation. Viewing the subject in the light of other days, when the practice of capping an exposed nerve was in its incipency, can we be surprised at the limited success met with and the meagre support it received at the hands of our profession then, when to-day, with a theoretical and practical experience of twenty or thirty years in advance, and many valuable improvements to render us assistance, we fail in not a few of such cases intrusted to our care. Indeed, quite a number of the profession have abandoned the operation to considerable extent, resorting to it only when the pulp presents unmistakable signs of freedom from morbid conditions, while upon the other hand a few have turned their attention to therapeutical treatment when necessary, and, judging from the amount of success obtained in a comparatively short time, we would at least consider the practice commendable and well worthy a thorough trial.

When the practice of capping, for the purpose of protecting an exposed pulp first began to attract attention, its enemies were numerous and for several years the reign of arsenic or its kindred preparations continued unabated, but now we may rejoice in the thought that this fell destroyer has seen its palmyest days, and the possibility of saving an exposed pulp, when there exists but little inflammation, is no longer a question at issue, the only question being one as regards the relative value of the materials in use and the most satisfactory mode of manipulating the same to secure the best possible results.

If I mistake not, capping an exposed nerve or pulp dates prior to the operation of destroying it, and the first material used was the charred surface of the pulp itself, the actual cautery being used to produce the char, and this broken down tissue left remaining as a shield or barrier between the living pulp beneath and external filling. As might be inferred from the rudeness of the means resorted to and the nature of the parts involved, its use was not long continued; but the ill-success of this first attempt to fill over an exposed pulp, in all probability gave rise to the employment of means for its entire de-

struction. Shortly after this, metallic capping merged into use, sheet gold taking precedent, though on account of its conducting properties, soon yielded its laurels to lead and other materials of less heat-conducting powers, all of which have gradually fallen into disrepute ; lead from its ease of adaptation to the wall of the cavity, and from the supposition entertained at one time that the oxyd deposited beneath the capping proved beneficial in allaying inflammatory action has enjoyed quite an extensive reputation. In the mean time, chemical science has not failed to appreciate the difficulties of our position, or been derelict of her duty, but has advanced nobly to our assistance, and presents a material for our consideration which bids fair to eclipse all of its predecessors, and already opens a new era in the capping of exposed pulps. Its composition is chloride of zinc, in solution and calcined oxyd of zinc ; and, I believe, the credit of first using this article as a filling for decayed teeth is due to Drs. Keep, of Boston, and Metcalfe, of New Haven. Since then, not unlike other articles of merit, it has come very gradually into general use, improving in quality as its deficiencies were ascertained and the demand more extensive, until to-day it occupies a position enviable indeed, standing upon its own merits an auxiliary in operative Dentistry worthy of our esteem and recommendation. As a protective shield for an exposed pulp it has not been in general use many years, though for complete fillings and other purposes in which it has rendered valuable services, it has withstood a fair test for a considerable time.

All materials employed, or that have been in general use, and every theory linked with practical application in the Dental catalogue, has been burdened more or less, with imperfections and objections, and, as a matter of course, oxy-chloride of zinc has its complete share, and if we were to judge and be governed by the opinions of a few, it certainly has an overdose.

Prominent among the objections urged against the use of this article as a shield over an exposed pulp is first, that it is entirely too porous, consequently, when in close proximity to the pulp, would have a tendency toward absorbing all poisonous or effete matter existing at the point of contact, thereby rendering it unfit to be placed in such near relation with living tissues, laden as it would be with such impurities ; second, that the escharotic properties possessed by the chloride is dangerous to the life of the pulp, and many cases are cited in which its use (rather abuse) has destroyed the life of this

valuable structure. There are other objections, but those which I have noted seem to be the principle ones against its employment in this direction. As to the first mentioned, it is only necessary to state that our endeavor should be in the preparation of such cases to rid, if possible, the pulp and entire decayed cavity of the least indication of disorganized tissue or any like impurities. Should there none form after the operation, the difficulty is overcome. To the second objection we would reply that a judicious use of the os-artificial, when well prepared, would obviate all such results, as the chloride is not taken into the circulation, and it is hardly probable that its use would destroy the pulp, unless employed in such quantities as to produce a great amount of inflammation.

The manner of introducing this material, and its consistency at the time it is introduced, tends as much probably to govern the results of the operation as anything else concerned, and is, no doubt, too often overlooked or entirely disregarded, and failures from such neglect are credited to the material.

Should it be mixed too thick or allowed to dry out too much before introducing, the force required to adapt it closely to the walls of the cavity would give rise to congestion and consequent inflammation, or if placed in gently while thick as before, then there would exist a lack of cohesion in the particles or the filling; also, imperfect adaptation to the exposed surface of the pulp, the result of which would be crumbling of the cap upon introduction of the filling over it, or a place left between the shield and pulp, which condition would surely induce strangulation and death of the part involved, while a reverse of this mixing and introducing it of too thin a consistency would prove equally disastrous. We are all aware that a solution of chloride of zinc enters into the composition of os-artificial, and that it is endowed with powerful escharotic properties, and in case we should incorporate this substance too freely with the calcined oxyd, its effects would not only be very powerful, but would tend toward the production of no small amount of irritation, and probably to such an extent that the vital forces would not suffice to re-establish healthy action. We will grant, however, the possibility of there being sufficient reaction of the recuperative powers to counteract the irritation existing, in which event we have left for our consideration a thoroughly charred surface of the pulp at the point of exposure. The question now arises as to the probability of the char remaining *in situ*. If such were the case we would apprehend no danger what-

ever, though I am inclined to the opposite opinion that such is not the condition of affairs, but that the char is removed by absorption, not taken up by the capping material, but through the medium of the absorbent vessels of the pulp stimulated to increased action as a consequence of great irritation, thus ridding itself of the cause and leaving an intervening space between the filling and pulp, corresponding in size to the extent of broken down tissue, thereby rendering the possibility of success doubtful, as the space could not certainly exist without more or less trouble. However, this neglect should not argue against the usefulness of the material in such operations, but only guard us against its abuse. As regards my manner of introducing the oxy-chloride of zinc over an exposed pulp, I have nothing new to offer in that direction, and in conclusion would say that this material, when properly prepared and manipulated with the care that the delicacy of the operation requires is, in the vast majority of cases, far superior to any other article extant as a protection for exposed pulps or sensitive dentine, and especially is it invaluable as an additional shield between the filling and nerve, when there exists but a thin lamina of dentine over the latter.—*Dental Register*.

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## EDITORIAL.

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### MAINTAINING PROFESSIONAL CHARACTER.

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In city practice, it is quite common for our patients to come in frequent contact with other dentists, either in social gatherings, or even in their office, in company with friends, or perhaps to obtain relief of pain during our temporary absence. That some dentists possess sufficient self respect and honor, to converse about their confreres without disparaging them, is happily true; but that others have not, is also an undoubted fact. In the present state of our profession, we may expect to find a certain element whose highest ambition is to make money, and who will resort to the most despicable means of attracting attention; but among confreres who stand on the same social and professional level, it is certainly not to be expected of them, that they will avail themselves of favorable opportunities to draw the patients of others away, by offers to do certain work for the same or a lower price, and by extolling their own capabilities, and depreciating those of every other practitioner.

We have had parties coming to our office with woful stories of

their last dentist, apparently believing that dentists have so little fine feeling of honor and *esprit de corps* for one another, that they appreciate any revilement of co-workers they (the patients) may choose to offer. If a man is a quack and an impostor, we have no hesitation in stating our opinion of such a one; but if he is merely a poor operator, trying honestly to do his best, even if he stands aloof from our Associations, and does not subscribe to the Journal, we have no hesitation in saying all the good of him we know, and none of the evil. That this is a principle common to many, long before we were born, or dental ethics ever heard of, we are well aware; but we happen to know some fine *professing gentlemen*, who do not stickle at other measures.

A lady called professionally, some weeks ago, stating that she was a patient of Dr. ———; one of the best operators in this country. Two years ago she had had nine or ten cavities filled with gold by him, and six of these fillings had fallen out, while the remainder looked very shaky. Dr. ——— came in for her criticism; and we all know that while the ladies are our best friends, professionally, when we gain their confidence and esteem, they make very bad enemies when we lose their favor—with all respect to them. Upon examining the teeth, I saw that she entirely neglected hygienic precautions, and her mouth was offensive in the extreme; the teeth covered with tartar, and the remaining fillings so discoloured and gray that they could hardly be recognized.

Now here was an opportunity to vilify or defend an eminent confrere. By the former we would gain the lady's custom and that of many friends she would influence, but this at the sacrifice of all moral and professional honor. We assured the lady that, not only from the reputation of our confrere, but from the appearance of the fillings remaining, we had no doubt but that the work was well and honestly done; but that the best fillings in the world were not proof against such uncleanness as her mouth exhibited, and that we were rather surprised than otherwise to find any left.

Other cases present themselves to every dentist where he has opportunities to get some of that class of patients who would as soon go to one Dentist as another, but who have made appointments or arrangements with some certain one. It may happen, for instance, that one Dentist has extracted the teeth and prepared the mouth for an artificial substitute, and that the patient, as is foolishly the fashion in Canada, is not expected to make any payment until the set is

inserted, and that, by the persuasion of cheap prices, or some friend of another Dentist, the patient goes to the latter and states the fact that she had arranged with Dr. So and So, but has decided to change her Dentist. Now is it honest or professional to induce such a patient to stay? Many believe not, and practice accordingly; but there are others whose whole professional life seems guided by

“ the simple plan

That he should take who has the power,  
And he should keep who can.”

W. G. B.

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#### A NEW FLASK FOR RUBBER WORK.

We have received from Mr. S. B. Chandler, and have been using for the last few days, a new flask for rubber work which in many respects we consider to be superior to any that we have ever used. Those that we have, are made of brass, which is not acted on by the mercury and sulphur contained in the rubber to any thing like the extent that those made of iron are, and consequently do not dirty the hands as badly. There are no screws about it, to be wearing out not only the threads but our patience, too. They are brought together by a clamp, which, by the way, every one must provide for himself. If we may be allowed to do so, we would suggest the propriety of a clamp being furnished with the flasks. C. S. C.

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AN OVERSIGHT.—By an oversight, the name of the writer of the Article taken from the Canada Medical Journal, entitled “Case of dead, misplaced wisdom tooth of lower jaw,” was omitted. It should have been credited to Arch. E. Malloch, M. D. of this city.

There will be a meeting of the Royal College of Dental Surgeons held at the College Rooms, Toronto, on Tuesday the 18th instant, at 10 o'clock, A. M.

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#### MISCELLANEOUS.

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##### WHY DO NOT OUR TEETH LAST OUR LIFETIME

That they are made as perfect, if the right materials are furnished, there cannot be a doubt. But are the necessary elements furnished to children as they are to the young of other animals? And do we not subject our teeth to deleterious influences from which animals that obey their natural instincts are exempt. The forming young of

other animals, while dependent on the mother, get lime, and phosphorous, and potash, and silex, and all the other elements of which the teeth are composed, from the blood or teeth of the mother, and she gets them from the food which Nature provides containing those elements in their natural proportions.

But where can the child in its forming state get these necessary elements, whose mother lives principally on starch and butter, and sugar, neither of which contains a particle of lime, phosphorus, potash or silex? Nature performs no miracles. She makes teeth as glass is made, by combining the elements which compose them according to her own chemical principles. And this illustration is the more forcible because the composition of the enamel of the teeth and of glass is very nearly identical; both, at least, requiring the combination of silex with some alkaline principle.

If, then, the mother of an unborn or nursing infant lives on white bread and butter, pastry, and confectionery, which contain no silex, and very little of the other elements which compose the teeth, nothing short of a miracle can give her a child with good teeth, and especially with teeth enamelled.

But what articles of food will make good teeth? Good milk will make good teeth, for it makes them for calves. Good meat will make good teeth, for it makes them for lions and wolves. Good vegetables and fruits will make good teeth, for they make them for monkeys.

Good corn, oats, barley, wheat, rye, and indeed everything that grows, will make good teeth, if eaten in their natural state, no elements being taken out; for every one of them does make teeth for horses, cows, sheep, or some other animal. But starch, sugar, lard, or butter will not make good teeth. You tried them all with your child's first teeth, and failed; and your neighbours have tried them, and indeed all Christendom has tried them, and the result is that a man or woman at forty with good, sound teeth is a very rare exception.—*Philosophy of Eating.*

AMAURNIS CAUSED BY CROWDING OF TEETH.—Mr. Hancock, (*Lancet*) reports the following peculiar case: a boy, aged eleven, whose sight had been previously unimpaired, found upon waking one morning that his sight was entirely lost. He was admitted to the Charing-Cross Hospital about a month afterwards, when it was found that his teeth were much crowded and wedged together; the jaws, in fact, not being large enough for them. Two permanent and four milk molar teeth were extracted, and the boy could distinguish light from darkness on the same evening; on the following morning he could make out objects. Eleven days after, he was discharged cured, the only treatment beyond the removal of the teeth, being two doses of aperient medicine.—*Nashville Journal of Medicine and Surgery.*

THE  
CANADA JOURNAL  
OF  
DENTAL SCIENCE.

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VOL. II.]

FEBRUARY, 1870.

[No. 7.

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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THE HAND MALLET IN FILLING TEETH.

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BY W. GEO. BEERS, MONTREAL.

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*Read before the Dental Association of the Province of Quebec.*

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I once had the pleasure of sitting, Gamaliel like, at the feet of Dr. Atkinson of New York, in his office, watching him filling with the aid of the hand mallet, which he introduced to the profession in 1861. Although I had previously seen it used by good operators in the United States, and had used it myself to some extent, I never had entire confidence in it until I witnessed Dr. Atkinson's operations.

There is something inoculative in the enthusiasm of a man of genius who rides a hobby, especially if that hobby is acknowledged by competitors to be a great step towards perfection in any sphere of labor. More especially is this true if the enthusiast also happens to be the inventor. The result has been that after receiving this stimulus I persevered in the use of the hand mallet, and now adhere to it almost exclusively. I am fully convinced that its judicious use is capable of producing superior fillings to those done by hand pressure, and I will endeavour briefly to lay before you some of its merits, as well as every demerit I know it to possess; my object being, not to accumulate arguments to sustain my *penchant* for it, but to elicit truth, and the best means to success. I would premise, however, by saying, that while strongly advocating the use of the hand mallet, I can fully appreciate the real excellence of operations achieved with

hand pressure, more than a quarter of century old; and that when looking at gold fillings standing perfectly good to-day which were inserted many years ago, with very meagre facilities compared to those we now enjoy, we cannot but recognize the fact, that what was capable of being done under such circumstances in the olden time, is even more possible at present, with our improved means. But this is no more a reasonable argument for adhering to hand pressure, than that we should keep to the old key of Garenggeot because it was successful in the hands of the old operators. If such a principle were held, there would be an end to all progress in the profession.

Without attempting to discuss the various principles concerned in preparing cavities, and filling, I will merely refer to one important consideration, viz.: that all other conditions being efficiently fulfilled, the more uniformly dense the gold, the better, in all probability, will be the operation. Now whether we consider the plan of consolidating each piece of gold as it is introduced, or a large body of metal which has been loosely placed in a cavity for condensation *en masse*, or the final condensation after the cavity has been completely and firmly packed, it stands to reason that the mallet will subserve the object much better than the pressure of the hand and arm. In principle it is analogous to a nail driven into a board. The most powerful hand alone could not force a nail to any extent into the wood; but the impaction of a light hammer in the hands even of one of inferior muscular development, will easily drive it up to the head. I have frequently used the mallet on hand pressure fillings of the best operators, which fillings were to all appearance solid and flush, and have invariably succeeded in driving them in, so as to be compelled to renew their fullness. By weighing the pieces of gold before introduction, I found in several instances, that I could condense these fillings, so as to enable me to put in from a quarter of a grain to three grains more gold, according to the size of the original filling, and the circumference of the mouth of the cavity. It will be easily understood that the greater the circumference of the orifice of a plugged cavity, the more easily could the contents be condensed in this experiment; and that the latter is also facilitated by convenience of access, and the strength of the walls.

Several months ago a trial was held in Boston, between automatic mallet force and hand pressure, to determine the difference of density,

with the following result. The space filled was the same in both tests. The foil used was adhesive, No. 3, in half-sheet peices.

Hand pressure.—Number of thrusts, ranged from 171 to 318 to the half sheet. Time, 1 hour and 34 minutes. Weight of filling, 24 grains. Automatic mallet.—Number of blows, ranged from 130 to 275 to the half sheet. Time, 1 hour and 8 minutes. Weight of filling 28 grains. Comparisons are suggestive.

I abjured the automatic mallet, because of the trouble of changing the plugger points, and their unsteadiness in the socket. I found too, that the hand mallet was less objected to by patients, and above all, that with it I could operate more to my own satisfaction. A few more of the advantages of the hand mallet may be thus enumerated. 1st. The operator has more control of the patient, and his foil. 2nd. The labor is less exhaustive than the muscular manner used in hand pressure, and it is certainly easier for the patient. 3rd. You can build up crowns, which could not be done as perfectly, if at all, by hand pressure. 4th. There is no danger of the plugger slipping. 5th. In some places where the pressure of the hand is weakened by the difficulty of access, the taps on the head of the plugger will condense the gold more effectually. The mallet has also been the means of enabling poor dentists to lay in a stock of the best instruments, by making ivory and mother of pearl an utterly useless article for handles. The consequence too, has been, that there is more attention paid to the useful, and less to the ornamental, in the manufacture of pluggers.

The difficulties associated with the use of the hand mallet, may present themselves in different aspects to different operators; but we must remember that hand pressure is by no means devoid of embarrassment, and that excellence in operating by either method is always attained by overcoming impediments, and mastering not only the elementary principles, but the various anomalies which are brought before our view.

1st. The necessity of having an assistant is to some operators a strong objection, both on account of the extra expense of labor it may involve, and the possible or actual objection shown by certain patients to the presence, near the chair, of any other than the dentist. For awhile I tried using the mallet myself, by reversing the recent improvement of seven inch pluggers, and cutting them as short as three and a half, so that I might have the plugger and the mallet nearer to each other, and more under control of my hands. I found

by shortening the plugger, too, that there was no danger of missing the stroke ; as when using the seven inch, and keeping the eyes fixed on the cavity and the gold, the tapping was often guesswork, and the blow very irregular. In difficult cavities, however, I found myself entirely unable to do justice to the work, and I abandoned the short pluggers. The objection to an assistant may in most cases be removed by a little explanation of his value, previous to his appearance, and during the operation he should be kept as much behind the chair as possible, in cases where patients are unreasonably prejudiced. It is much better, however, that the assistant should be able to see the point of the plugger.

2nd. Having obtained and trained an assistant, your work is at a dead stop in the event of his absence, as much as the sound of an organ in the absence of the boy at the bellows.

3rd. There is danger of the assistant executing a sort of cadence in malleting, instead of taking time from the indications of the operator. I had a lad whose musical propensities were so often aroused by the monotony of his work, that I often fancied I could detect in the variation of his blows, an imitation of the air of "Cheer, Boys, Cheer!" I dispensed with his services in double quick time.

4th. There is considerable risk of fracturing enamel and edges, and somewhat more risk in frail cavities than with hand pressure ; but, as I said before, these risks are associated with all methods of filling, and an operator who cannot regulate and avoid these contingencies with the mallet, had better never use it. Very much depends upon your assistant. According to his intelligence and practice, should your care be. To increase and diminish the impactive force is much easier with the hand than the automatic mallet, if your assistant is well trained. I regulate this by numbering strokes, 1, 2, 3, 4, and make the assistant begin by 1 strokes, at sufficient intervals of time to enable me to control the gold, and use a little hand pressure ahead of the mallet. Great care is necessary to regulate the intervals, so that the stroke will not be delivered too soon. The variations of blow may be regulated by the words light, hard, harder, slow, quick, &c., as the operator may see fit. A simple nod of the head may be used as an indication of the time to strike, if the assistant is not well enough trained to judge for himself. The blow should be a sudden, springing tap, direct upon the end of the plugger. The handle should be screwed tightly into the head of the mallet.

5th. I find it almost impossible to depend as entirely upon mallet force in the posterior approximal cavities of the second and third molars, as in other cavities, unless an opening is made through the crown. It must be remembered that there is always a certain amount of hand pressure used immediately in advance of the blow, under all circumstances; but there are difficult cavities in the above two teeth in both maxillaries, wherein I have no faith in the exclusive use of the mallet. A strong point against the hand mallet is thought to be in the assertion, that the direction of force is on a line or parallel with the shaft of the plugger, and that a curved point cannot be steadied so as to give a firm impaction of the gold, but must necessarily glide off, or over the metal. In opposition to this argument, the advocates of mallet force hold, that an instrument bent at any angle, can be controlled in difficult cavities by a strong hand pressure on the gold at the point desired, steadying the point of the plugger to resist the direction of the blow, at the moment the mallet is used. The advantage of the mallet is shown in just such cases; as after the force of hand pressure has been exhausted, further condensation with the aid of the mallet may be made.

Dr. Atkinson has substituted a metal head in the mallet, in place of lignum vitæ, from two ounces and a half up to ten or twelve. Pure tin, tin and lead, and composition metal have been used, but I prefer pure lead, as the vibration is less, the spring tap duller, and it is easily renewed. In almost every case, I have tested the wooden and lead mallets upon the same patient, and with only one exception, the preference was given to the latter. I believe I was the first to use it in Canada, and before it appeared in the dental depots, and my humble experience is identical with that of Dr. Fitch, who said that if he had to go back to hand pressure, he would abandon dentistry.

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### DENTAL HYGIENE.

BY M. FOURTIER, QUEBEC.

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*Read before the Dental Association of the Province of Quebec,*

*January 20th, 1870.*

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From time immemorial and among all civilized nations, medical practitioners, physiologists, naturalists, philosophers, poets, and phy-

siognomists have been preoccupied with the study of the mouth, its hygiene, and the preservation of the teeth therein. We even find in the Bible several passages which prove that the buccal science had made great progress among the Hebrews. In the book of Solomon's proverbs, many passages can be found applicable to buccognomony. In the 13th chap., and 30th verse? the King, prophet, and naturalist says: "He who nourisheth evil designs with a quick and piercing eye, exhibits his evil intentions by biting the lips;" further on he exclaims: "Wisdom shines in the mouth and on the face of man,"—"We know," said he, "a person at first sight, and can discern by his facial appearance the man of sense; the investment of the body, the smile of the teeth, the bearing make known what he is!" The same Solomon says, in the Song of Songs, in speaking of the Queen of Saba: "Your teeth are white like unto a flock of young lambs lately tended, and issuing from the bath." Thus, we conclude, that among the Hebrews buccal science, in its general relation to physiognomy, had made great progress since we discover it mentioned in the *Sacred Book*.

Among the Egyptians each part of the body had its specialist; and the *mouth* occupied one of the highest grades in their surgical and hygienic studies. Some length of time before Hippocrates, the medical practitioners and surgeons of Greece had given their attention and cares to the mouth, and from thence commenced the investigations into buccal physiognomy. The celebrated Hippocrates, in his works, has left us the most brilliant theories on maladies of the buccal cavity, and on the assiduous care which the different portions of this organ exact. The philosopher Lucien also thought deeply on the importance of buccal studies. In speaking of the beautiful and incomparable Pentheus, he cried with enthusiasm: "How can I paint the beauty of her *teeth*, which were shown so in her smiles? So white, even, pressed the one against the other, they presented to the delighted eye the simile of a magnificent collar of pearls, they were the mirror of her heart, the reflector of her soul!"

The poets of the "great epoch," that is to say the Augustine age, boasted and sung of the mouth's charms, and inveighed indignantly of the negligence with which the ladies of that period treated their teeth, gums and lips. It will suffice to convince every one of the magic influence exercised by a well formed and well preserved mouth—Ovid says in his "Art of Loving," in speaking of a young and beautiful woman: "I recognize your careful and intelligent habits,

in the pearly whiteness which shines from your mouth," again, "Oh! how delightful the attraction of a rosy mouth, garnished with beautiful teeth! The lips' movements during a smile harmonize so admirably with the dental arch, with the sparkle as with the langour of the eye." The Roman and Athenian ladies were aware of and appreciated these advantages, and knew how to aid nature when deficient, or to repair the ravages of disease by calling to their succor and having recourse to all hygienic resources for the mouth. Permit me, gentlemen, to allude slightly to the celebrated Lavater, our superior in many things—we who glean after him the fields of physiognomy, should bow respectfully to this great man, who, the *first* devoted his attention and studies to the "human mouth" specially, and the result of whose investigations will be of great moral and scientific influence. He, it was, who first stated that physiognomy and consequently buccognomony should be the means of uniting hearts so that friendship should have no more solid foundation. In fact, how many mouths do we not meet which repel friendship and seem as little formed to express this sentiment as to inspire it—are there not many, on the contrary, which bear a character of candour, of goodness, of affection, to which we cannot refuse to place confidence. LeBrun, painter to Louis XIV, had said, *before* Lavater, "The mouth is the part which, of all the face, indicates the most particularly the emotions of the heart."

Thus, you perceive, gentlemen, by what has been said, that even the most ancient poets agree in lauding to the highest degree the cares which should be given to the hygiene of the mouth. Then, the *teeth* as well as the other parts of the mouth, of which they are the most precious ornaments, demand of necessity the same care, the same vigilance of each day—for propriety in this respect is indispensable, not only to preserve the charms of the mouth, but the *health* as well. A celebrated doctor has said: "The foetid odours of the mouth are classed among the causes sufficient to procure a divorce."

Let us pass, now, to the "toilet of the teeth." The care which we should give to the toilet of the teeth is very important, inasmuch as it tends to their preservation, not only in health, but in all their natural beauty. We should wash the teeth at least once per day, immediately after rising, in order to remove the mucous deposits formed during sleep, and even again, night and morning, taking off thus the fragments of animal food, in fact any alimentary remains which during the night communicate to the mouth a very disagree-

able odour. After sickness, when notwithstanding all the precautions that could be taken, tartar has formed on the teeth, it should be removed without fear, by a dentist worthy of confidence. It is a mistake to fancy that this small operation is injurious; the enamel, when not defective, is much harder than the instrument, the steel glides, and removes the tartar without even attacking the polish of the tooth. The only fear is of falling into the hands of a dentist who is too hasty and careless in his work, or who to abridge his work makes use of some acid which dissolves the tartar, but attacks the tooth which it whitens for a moment, but which brilliance soon vanishes to leave the organs much yellower than before. Even without it being absolutely necessary, I believe that careful persons should have their teeth cleansed and scraped once every year at least. The brush can not be used everywhere, and notwithstanding the greatest care, there forms at the posterior or lingual portion of the inferior incisors a layer of tartar that the instrument of the dentist alone can remove. This slight operation causes the dentist to examine, in order, the teeth one by one, he discovers then from the beginning the least defects, and can immediately remedy them, as the evil being perceived in time can most always be arrested. Too acidulated dentrifices must be evaded as *poison*, and, in fact, most of the elixirs whose composition is unknown.

The teeth must not be treated in excess of propriety, if they are not naturally white do you imagine you can force nature and make white alabaster from grey or yellow; therefore, have care of the teeth, but do not exceed what is required by nature, it would be very imprudently doing harm to those organs.

Wealthy persons should be counselled to choose their food with great circumspection. I will recite on this subject, this line of Horace: "A proud tooth eats not common viands." Vegetable food is generally much more favorable than animal for the preservation of the teeth. Naturalists and travellers advance the statement that carnivorous people lose their teeth at an early age. Salt food, above all, should be abstained from, as its action is considered by Medicine and Surgery to be very injurious to the buccal organization—salts corrode the gums, destroy the enamel and engender scorbutic affections. We are frequently asked if sugar is really injurious to the teeth. I have always answered that the sugar, which is bought at the grocers, could be the cause of the least injury; but it was not

the same with that vended by the confectioners, as very often, very injurious substances were introduced into it.

Women when occupied with the many cares of the toilet, habitually hold between the teeth the pins used for adjusting their laces, collars, etc. It is a very injurious habit—in fact the reiterated contact of the pins wears away, very soon, their teeth.

During the dancing parties of the winter months, Ladies, young and old, are accustomed to exhibit themselves in the halls, drawing-rooms etc., dressed in robes of fleecy gauze and ornamented with flowers etc. The coquetry, inherited from Eve, our common mother, causes them to forget the rigors of temperature. Little care they ! They desire to shine ! Very well, let them know, if they are ignorant of the fact, that the sudden changes of temperature, can exercise, on the teeth principally, the most injurious influences during the menstrual period. Hippocrates in his 18th Aphorism, Section 5, says that cold is very injurious to the teeth. Experience has shown that that which injures this part of the mouth particularly, is the sudden transition from cold to heat, from heat to cold. This transition affects the enamel, and if we expose to the air the sensitive part of the tooth, caries very soon makes its appearance. The same effect takes place with porcelain.

These precepts are so much more important as the loss of the teeth occasion the strangest modifications on the general outlines of the physiognomy. Again the teeth are the key-board of the voice—the orator Cicero, who dipped successfully into physiology, compares with reason the teeth to the chords of a lyre, the sounds of which can be more or less harmonious according to the perfection of the instrument. You must have noticed that persons who had lost the superior and inferior incisors are much changed in features, and that they pronounce with difficulty the guttural consonants. Then, these precious organs, without the double relation of utility and beauty, are subject like the other portions of our bodies to numerous diseases. These affection, more or less serious, depend some on the physical constitution of the individual, and others on nervous anomalies, defects in the mucous membrane of the mouth, occasioned by mercurial preparations, etc. Let us preserve then the distinction, the aristocracy of the mouth, the temple of speech and harmonious sounds, which hides so many secrets and reveals them with such unreserved confidence. Let us say to mothers of families,—O, ye mothers, pretty or handsome, who have no more cherished desire

than to see your beauty, grace and divine smile reflected in your offspring—quickly hasten and have recourse to dental hygiene, which alone can indicate the sure means of perpetuating your charms from generation to generation. Ye mothers who have received from nature the celestial gifts of beauty, do not forget that providence has established you guardians or rather depositors of an inappreciable treasure which should be transmitted to your children, above all to your daughters, in all its lustre, in all its purity. When the day arrives for them to choose a husband or to approve of one who has been chosen, remember the buccognomonic precepts—know surely, that the mouth as much as the eyes, is the mirror of the soul and even a revelation of the heart. At this price you will maintain the purity of your family, and when age commences its ravages; when your teeth drop one by one like leaves in early autumn, you will have the consolation to see yourself perpetuated in your little children, whose irreproachable teeth will remind you of the time when *your* mouth was also ornamented by thirty-two diamonds.

Notwithstanding all that has been said, we have also, gentlemen, a task as glorious and as important to accomplish in that which concerns the teeth and care of the mouth—and that task gives us the right, imposes on us, in fact, the duty of contributing our mite to Physiognomy.

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### AN ADDRESS

BY W. C. ADAMS.

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TORONTO, January, 1870.

*To the Members of the Dental Association of Ontario,*

GENTLEMEN:—I take this opportunity to thank you for the honor you conferred upon me in appointing me as one of the delegates to represent our Association at the General (or as it was then National) American Dental Convention, which was held in 1868, at Niagara Falls. On arriving there, I found that their Constitution was so worded that they could not admit us as members, although most were in favor of doing so. A promise was made that they would change their Constitution and allow us to come in on an equal footing with other delegates, and members of local Associations; making it a general or continental Convention. There was much to interest

and profit those seeking for the truth; some of which I expected would have been reported by our Secretary, as he was there. Sickness in my own family prevented me from giving such as I could recollect through the Journal to you.

In our last July meeting, I urged the appointment of delegates pledged to go, that we should not even seem to trifle with those who had kindly offered to so change the wording of their Constitution as to afford us the privilege of joining with them. As no one else present would engage to go, I consented to, as of a duty, and was again appointed; and went and was admitted as a permanent member. I think it a very great privilege to meet with those gentlemen representing the *best* dental professional skill; men who are above truckling for position, power, or a name, or shirking duty for personal advantage and preferment.

I went to the Convention held at Saratoga Springs, N. Y., on Monday the 2nd of August last, and returned on Saturday the 7th, and found my first-born, Eliza Matilda had been taken ill on Friday morning previous. She died on Monday morning the 9th, *while her mother was still away from home*, of diphtheria; aged nine years, eleven months and six days. On the 13th, my youngest and third daughter, Kitty Isa Victoria, was taken ill, and died on the 19th, of inflammatory croup; aged six years, five months and six days. On the 21st of August my wife was taken down ill, and though yet spared to us, is not able to sit up.

Thus my watching and anxiety have prevented me from giving you some of the ideas of truth, and objects of research put forward by our friends of the General Convention.

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## PROCEEDINGS OF SOCIETIES.

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### ROYAL COLLEGE OF DENTAL SURGEONS OF ONTARIO.

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The regular meeting of the Board of Directors and Examiners of the College, was held at the College rooms, corner of Church and Court streets, Toronto, commencing at 10 a.m., on Tuesday, Jan. 18, 1870.

Members present—B. W. Day, M. D., L. D. S., President; J. O'Donnell, L.D.S., Secretary. C. S. Chittenden, L. D. S., Treasurer; T. Wood, L. D. S., Registrar; G. V. N. Relyea, L. D. S., C. Kahn, L.D.S., F. G. Callender, L.D.S., J. B. Meacham, L.D.S., and George L. Elliott, L.D.S.

## EXAMINERS APPOINTED FOR THE SESSION.

Dr. Day, Anatomy ; Messrs. Wood and O'Donnell, Dental Surgery ; Callender and Chittenden, Operative Dentistry ; Relyea and Meacham, Mechanical Dentistry ; Elliott and Kahn, Institutes of Dentistry ; O'Donnell, Physiology ; and Kahn, Chemistry.

Mr. O'Donnell gave notice that he would move before the close of the session a resolution respecting students articleed subsequently to the passing of the Act.

Mr. E. Patterson, of the Village of Glasgow, Ont., was granted a license to practice, he having furnished the necessary information as having had five years' established office practice previous to the passing of the Act.

The meeting then adjourned, after which the written examinations commenced.

## EVENING SESSION.

The following gentlemen being British subjects, but non-residents of the Province, were granted the honorary degree of L.D.S. :— Messrs. A. Bernard and W. George Beers, of Montreal, President and Secretary of the Dental Association of the Province of Quebec ; Joseph Maurice and Walter John Woodman, of London, England ; George Gilbert, Gibraltar ; W. H. Thorner, of Chili, South America ; and Wm. J. Newman, Liverpool, England, Dentist to the Liverpool Dental Hospital.

## THURSDAY'S SESSION.

The President in the chair.

The following gentlemen were granted licenses to practice, having passed successful examinations :—J. H. W. Bedford and M. D. Ward, of Belleville ; D. H. Platt, Picton ; and W. H. Cannon, township of King.

In addition to the gentlemen appointed at the last meeting to prosecute persons practising dentistry without license, the following were appointed :—Charles E. Pegley, Chatham ; Henry Thornton, St. Thomas ; T. W. H. Willson, Bradford ; B. C. Davy, Napanee.

## FRIDAY.

In pursuance of a notice given, the following resolution was adopted :—

On motion of Mr. O'Donnell, seconded by Mr. Chittenden, "That

in order that students may get a dental education necessary to the requirements of the profession and wants of the public, all who have become articled subsequently to passing of the Act of March 3, 1868, be obliged to attend the required terms in the Royal College of Dental Surgeons, before this Board will admit them for examination, unless they can give satisfactory proof of having attended the same time in some recognized, chartered Dental College."

The second election of a Board will take place in this city on the second Tuesday in June next, at 7 p.m.

After other routine business, the meeting adjourned.

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#### TORONTO DISTRICT DENTAL ASSOCIATION.

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A meeting was held in the St. Lawrence Hall on Wednesday, the 9th inst., for the purpose of organizing a social Society, the same to consist of the city of Toronto, the towns and villages north and east, including the towns of Peterborough and Cobourg.

At 2.30 p.m., Mr. Rowe was called to the chair, and Mr. J. B. Howe was requested to act as Secretary. The following gentlemen were present:—J. O'Donnell, L.D.S., Peterborough, Secretary of the Royal College of Dental Surgeons; F. G. Calender, L.D.S., Toronto, S.M.S., member of the College; Thos. Rowe, M.D., L.D.S., Cobourg; J. C. McCausland, L. D. S., Barrie; N. J. Peck, L. D. S., Richmond Hill; Henry Robinson, L.D.S., Schomberg; W. H. Aghew, L.D.S., Lloydtown; M. Pearson, Newmarket; M. E. Snider, L. D. S., W. Myers, L.D.S., R. G. Trotter, L.D.S., George Elliott, L.D.S., W. C. Adams, L. D. S., and J. B. Howe, L. D. S., Toronto; A. Robinson, Aurora; T. J. Jones, L.D.S., Bowmanville.

Moved by Mr. O'Donnell, seconded by Mr. Myers, that the following be a Committee to draft a Constitution and By-laws, and that they report at 7 o'clock this evening:—Messrs. Callender, Myers, Jones, H. Robinson, and McCausland. Carried.

On motion of Mr. Peck, seconded by Mr. Myers, that Mr. O'Donnell's name be added to the Committee, and the Chairman requested him to act as Chairman of Committee.

Dr. Rowe in the chair.

Mr. O'Donnell, Chairman of the Committee appointed to draft a Constitution and By-Laws, reported.

Mr. G. L. Elliott moved, seconded by Mr. Howe, that the report

be not received, and that the meeting adjourn *sine die*." Withdrawn.

The report was adopted with slight amendment, after reading it clause by clause.

On the motion of Mr. Causland seconded by Mr. Snider, the meeting went into Committee of the Whole for the election of officers. Mr. Peck in the chair.

The following gentlemen were elected :—President, T. Rowe, M. D., L. D. S. ; 1st Vice-President, W. C. Adams, L.D.S. ; 2nd do. J. C. McCausland, L.D.S. ; Secretary, J. B. Howe, L.D.S. ; Treasurer, T. J. Jones, L. D. S.

Moved by Mr. O'Donnell, seconded by Mr. Trotter, "That the members of this Association do all in their power to bring to justice any and all persons practicing Dentistry illegally, and that funds of the society be placed at the disposal of the Secretary, who shall prosecute on information of any member of the Association." Carried.

On motion of Mr. O'Donnell, seconded by Mr. Adams, the President appointed the following a General Committee of Management for the year, with power to arrange subjects for discussion, hour of meeting, &c. :—Messrs. McCausland, O'Donnell, H. Robinson, Howe, Trotter, Jones and Brimacombe.

Moved by Mr. O'Donnell, seconded by Mr. McCausland, "That the next meeting of this Association be held in the town of Bowmanville on the second Wednesday in April next." Carried.

The Committee appointed the following to read papers :—Mr. Peck, Inflammation of the Gums ; Mr. Jones, Mechanical Dentistry ; Dr. Rowe, Operative Dentistry ; Mr. Snider, on Articulation ; Mr. Callender, Fang Filling ; Mr. Trotter, Clinic.

The meeting then adjourned.—*Globe*.

## PENNSYLVANIA ASSOCIATION OF DENTAL SURGEONS.

At a monthly meeting of the Association, held Sept. 9, 1869, the subject of *oxychloride* of zinc was taken up for consideration.

Dr. Buckingham gave a condensed statement of the discussions had upon this subject at the Annual Meeting of the American Dental Association, held at Saratoga, in August.

Dr. J. Truman's use of this material was entirely experimental. The success that had followed justified its continued use. So far he had but few failures, and these did not involve the destruction of the pulp. They were confined to those cases where the pulp would not

tolerate the presence of the oxychloride without severe and continuous pain. In his judgment it will require years before any positive opinions, for or against, can be given in regard to its value as a material for capping.

Dr. Githens had used oxychloride of zinc for capping, and with some degree of success. For sensitive dentine, he had found it very valuable.

Dr. Wert thought this material was undergoing the same experience as amalgam. At one time wholly condemned as unfit for use, and then taken up and almost universally used. He had abandoned it as worthless for filling teeth, but since he had heard such favorable reports at Saratoga, he felt in duty bound to try it again. The subject was then continued for further discussion at a future meeting.

Dr. Githens presented a valuable specimen of four central incisors, the central and lateral of each side united. He had inserted a silver pivot, in amalgam, fifteen years previously. Recently, the tooth was thrown out of the mouth by an accident, and on examination, the silver pivot was found still firmly imbedded in the root.

Dr. Wert had succeeded in reimplanting teeth in a person of twenty-two years, and desired the opinion of members present on the policy of this operation.

Dr. Buckingham doubted whether it was possible for the nerve, once severed, ever to reunite. A tooth may be dead and still retain its color.

Dr. W. H. Trueman doubted the correctness of the theory upon which this operation was based, as in plastic operations the union must be kept up to insure success.

Dr. Jas. Truman said that this operation was a very old one, it being a favorite with the celebrated Hunter. Dr. A. Mitscherlich, of Berlin, had given a very full report of his work in this direction. The success he and other had met with, warranted us in performing it when needed.

#### OCTOBER 19, 1869.

The subject of oxychloride of zinc, continued from the last meeting, was taken up for consideration.

Dr. Buckingham had made some experiments, but they were not as yet satisfactory to himself. He could not determine its solubility in water, there being no test for moisture. Some absolutely washes out, owing, probably, to the condition of the saliva. It is soluble in

acids. The greater amount of acid the more solution. It absorbs large quantities of moisture. He used it for sensitive dentine, and fills pulp canals by placing it on the first piece of gold. It is mixed somewhat thicker than cream. In its antiseptic property it is fully equal to creasote. He had had some trouble in using it as a capping for nerves, and instanced a case where pain continued from eight to ten hours, and after extraction of the tooth found the pulp decomposed. He thought it was possible for oxychloride of zinc to preserve the pulp for years, and then, when its antiseptic properties have been lost, decomposition may ensue.

Dr. C. N. Peirce had not been a strenuous advocate for capping nerves. He thought a tooth with a live pulp of more value than a dead one. He had removed fillings of oxychloride of zinc, and found them in good condition. He had filled a number of teeth with it the past three months, and all as yet comfortable. In one of these there was a slight fungus growth of the pulp. He applied tissue paper, saturated with creasote, over the pulp previous to applying the cap. The patient had complained of shooting pains at a recent examination of one of these. He felt satisfied that the pulp was in process of destruction in this tooth. His success with paper, saturated with creasote, had been quite as good as with oxychloride. He was in favor of capping, if a reasonable hope existed of saving the tooth by that means, as the difficulties were many in filling roots. In the pulp canals he considered its use far preferable to creasote; owing to its antiseptic properties it would produce equally good results. For capping purposes he did not think oxychloride possessed any virtues over many other things. He reviewed the history of the operation of capping in its various forms. The apparent success in these made him cautious in regard to this capping. This material he deemed very valuable for use in those thin shells of teeth that would not bear any other kind. He had made some experiments in combining this material with metal filings, and also with amalgam, but was not prepared to give an opinion upon it, further than that the combination made much more solid fillings than oxychloride alone. After a test of several months no change had been manifest in those inserted. He exhibited several teeth filled in this way. Gold filings combined with oxychloride, the latter combined with amalgam; with the amalgam, mercury was used in the usual way.

Dr. Buckingham had used oxychloride to advantage in teeth to be filled with amalgam. He pressed the oxychloride against the walls

to prevent the amalgam from coming in contact with them. He also used it in front teeth with thin walls. He had not seen the teeth treated in this way since, and could not report results.

Dr. J. Truman's experience in this mode of practice had now extended over two years, and during the last year he had almost exclusively confined the treatment of exposed pulps to the process of capping with this material. From his observations, success depended, to a large extent, on the condition of the pulp at the time the application was made. Where there has been a congested state of the pulp previously, the pain will be much increased. In one recent case, so excruciating had this been, that he was obliged to remove and destroy the pulp in the usual manner. The best results had followed the capping of pulps recently exposed, and where no pain had previously been experienced. He had examined a number of cases where the oxychloride had been in from two to four weeks, and, with one exception, had found the pulps alive. In those cases, where most pain resulted, there was apparently no loss of vitality in the pulp. So satisfactory had been the results, that he felt satisfied to continue and wait the only true test, that of time. One filling that he had constantly under observation, had now been in ten months. The pulp was fully exposed at the time the cap was placed. The tooth remains in a perfectly comfortable condition, and apparently as healthy as the adjoining teeth. In his judgment, it was immaterial whether the pulp died or not, if the antiseptic properties of the chloride of zinc would prevent decomposition. The disintegration of the pulp produced, by its irritating effects on the peridental membrane, all the difficulties we had to contend with.

Dr. Buckingham stated that oxide of zinc was usually impure. If this is taken and recalcined it will set very soon.

Dr. Pettit had not had much experience. He had capped when possible. In one case the pain became so severe, in the course of two or three days, as to render extraction unavoidable. He had never filled permanently a tooth so capped. In one case, met with in Toledo, in a recent trip west, the dentist informed him that a slight pain, following capping of a tooth, induced him to examine it, when the pulp was found entirely destroyed, but with no signs present of decomposition.

Dr. R. Huey had capped nerves whenever possible. He had one case followed by severe pain, which, failing to relieve after several hours labor, he finally extracted it. He used the oxychloride to fill

a portion of the cavity, and had been very successful in bleaching by its use.

Dr. Pettit had one of his teeth filled by Dr. Truman over ten months ago. Pain followed for a few moments, each day, for a short time, and then gradually ceased.

Dr. Wildman had not used it for this purpose, as he had found, in former years, that the use of this article for sensitive dentine had often resulted in the destruction of the pulp.

Dr. Truman thought this an unfair conclusion. He had observed that the use of oxychloride, on a thin plate of dentine, covering the pulp, was attended by far more disastrous results, than when applied directly to it. The cause of this was not very clear to his mind, but the fact was indisputable.

Dr. Peirce thought this was owing to the fact that oxychloride would irritate and produce a congested condition of the vessels in the pulp. If these had no room for expansion, there would be increased inflammation and final destruction, resulting from the confinement within the dense walls of the envelope; on the other hand, if the opening was clear, the pulp would expand and the inflammation subside.

The subject was further continued to a future meeting.

#### NOVEMBER 9, 1869.

At a meeting of the Association, held for discussion, Dr. W. H. Trueman called attention to a new safety valve for vulcanizing, consisting of a brass tube containing fusible metal. He also presented specimens of copper, where explosions had taken place; also a tooth capped with oxychloride, and removed three years subsequently. The pulp had died in this, followed by alveolar abscess. This result he considered prophetic of future trouble in many similar operations.

Dr. Smedley said if this was prophetic of trouble, he was heaping up a large amount for himself in the future, as he had used it in a large number of cases with apparent success.

Dr. Buckingham stated some cases in the use of oxychloride. He could not see how chloride of zinc could be used and not produce destruction. Try it on the tongue, or on any other tissue, and the caustic effect will be painfully perceptible. He did not wish to condemn it, but felt it must result in the destruction of the pulp.

Dr. Smedley said, where pain had been excessive he had bled the pulp, and then filled. He had one tooth filled with this material in

his own mouth. Becoming uneasy from the statements made by prominent members in the profession, he had had it removed, and found the pulp still alive. He recapped, and it so far remains comfortable. This pulp had been treated three times with arsenical paste without success.

Dr. Wert remarked that it seemed to him that failure to destroy with arsenic would result in failure with any other material. Success, in his judgment, depended more on constitutional conditions than upon anything else, and, consequently, capping could not prove a general success.

He instanced a case of bleaching a discolored tooth, upon which he had tried all the different modes suggested without result. In desperation he attempted Dr. W. H. Trueman's process of applying nitric acid. The result exceeded his expectations; the change being very marked in a few moments. He subsequently treated it with bicarbonate of soda to neutralize any remaining acid.

Dr. W. H. Trueman instanced a case of exposed pulp. The patient refused to have the tooth extracted. After several years the tooth was again examined, when the pulp was found capped with secondary dentine. The individual was addicted to the use of tobacco, but he thought the conclusion hardly justifiable that the constant use of this would produce a re-development of osteo-dentine. This would be too much like those we often see arrived at in our journals, upon equally slender premises.

In regard to the use of nitric acid in bleaching, he would say, that he had studied its effects in teeth in his own mouth. He had found a few seconds sufficient to produce a change of color.

Dr. Wert explained his mode of manipulation. He used a gold instrument and pure nitric acid. The root was first filled tight with cotton. The nitric acid was kept in the cavity one minute by the watch. On removing the acid the cavity was freely syringed and dried. He then applied the bicarbonate of soda; after which cotton, saturated with creasote, was kept in the cavity for two days. Upon examination, the tooth was found as dark as before treatment. It was then syringed again, and the acid reapplied, allowing it to remain five minutes. The action was not as rapid upon the second application, but the tooth was restored to nearly its natural color. He had not seen the tooth since the last application.

Dr. W. H. Trueman called attention to the necessity of using chemically pure nitric acid. He followed the use of this by chloride

of lime, which would take up any remaining quantity of acid, and also continue the bleaching process. He also followed this with bicarbonate of soda and ammonia.

Dr. Buckingham had never known nitric acid used for bleaching, but had for the destruction of pulps.

Dr. Peirce said that the affinity between the acid and dentine would be very strong. It would follow the tubules, and remove the parietes and a large proportion of the tooth substance.

Dr. Buckingham remarked that this would be good theory if we knew whether the acid followed the animal matter of the tooth or removed the inorganic. Nitric acid acted upon animal tissue and gave it a yellow color. If the animal matter in the tubes is changed from a dark to a yellow the tooth will necessarily be changed. He considered the subject an important one.

In regard to the valve presented by Dr. W. H. Trueman, he could say he had but little faith in it. Fusible metal loses its character by a continued high temperature. The thermometer does not always indicate the amount of heat. This can be demonstrated by allowing a small escape of steam, when the mercury will rise suddenly a number of degrees. In some of the large factories they use something to keep the water in constant circulation. It is merely a question of time how long our vulcanizers will last. The period has about arrived when the first crop disposed of were beginning to blow up.

Dr. W. H. Trueman said, that a fusible metal that will melt at  $350^{\circ}$ , may be run up to  $370^{\circ}$ , before it will blow out. In a smooth glass vessel heat may be raised to a high degree without boiling. The least jar relieves the latent heat and sudden expansion takes place. The same thing may occur in vulcanizers and produce explosions.

Dr. Wert had had his vulcanizers made very thick. He had found that, at  $320^{\circ}$ , the application of a wet finger to the vulcanizer produced a hissing sound. He therefore uses this as an additional test.

Dr. Buckingham suggested that a disc of copper, properly arranged, should be attached to our vulcanizers. These discs could be tested to known strengths, and would indicate the amount of force.—*Dental Times*.

## SELECTED ARTICLES.

### THE INTER-DEPENDENCE OF DISEASES OF THE TEETH AND OF THE FEMALE PELVIC ORGANS.

BY N. W. HAWES, BOSTON, DEMONSTRATOR OF OPERATIVE DENTISTRY  
IN HARVARD UNIVERSITY.

The reflex influence produced by diseased teeth opens a subject so

patent to the Medical and Dental professions, that I feel my inability to inspire new thought upon the universally accepted fact, that disease in an organ may and does excite sympathy in contiguous or remote parts of the physical apparatus. Though the teeth are classed among the "superfluous organs," yet in their disease it has been shown that they exert a vital influence upon the whole living system. Among the affections enumerated by Dr. Fitch, in one of his dental works, as occasioned by diseased teeth, are phthisis pulmonalis, dyspepsia, inflammation of the eyes, epilepsy, hysteria, hypochondriasis, rheumatic affections, tic doloreux, etc. ; and he asks, in speaking of alarming diseases as being produced by slight causes, "Is it unfair, or unreasonable, to suppose that a diseased state of the teeth, or their being in a state of putrefaction and constant irritation and inflammation, should at times produce the most fatal diseases in the general system?"

Now, it is not necessary that they should be in a state of putrefaction to engender diseased influence. I at one time called upon a medical friend suffering from neuralgia, as he said, and remarking that he "was sorely afflicted at times," and had exhausted the whole list of anodynes, and found but temporary relief. I questioned him in regard to his teeth, eliciting the reply, that they were "sound as a nut, every one of them." On my persisting, he suffered me to make an examination, which resulted in the discovery of a left superior bicuspid root entirely covered by a healthy-appearing gum. This root was not purulent, or even unhealthy to the eye, but its removal put an end to his neuralgic sufferings, and fully converted him to belief in reflex influences of the teeth. Neither is it necessary that the teeth should be painful, to create disease. Is it uncommon for painless tumours to occasion death ; or for foreign and effete matter to produce the same result, even when entirely unsuspected as the cause, until this is developed by autopsy ? I could relate several cases where marked and immediate improvement in health has followed the removal of diseased teeth, whose influence has not been suspected. I will cite but one instance. About seven years ago, a lady called upon me for advice respecting her teeth. She had suffered long from dyspepsia, had a hacking cough and hectic fever, was exceedingly nervous, and of course somewhat emaciated. There was not a sound tooth to be found ; her gums were inflamed and putrid, with pus exuding from around nearly all her teeth. I at once advised their removal, and the adjustment of an artificial set, She ques-

tioned the propriety of going to the expense, inasmuch as her health was so precarious that she did not expect to live long. I dwelt upon the probability of an improvement in the general health after release from her teeth, and finally persuaded her to submit to the operation. The next day she came in and allowed me to extract her teeth,—twenty-eight in all—without anæsthesia, and thus remove the cause of all her infirmities, as was subsequently demonstrated by her speedy return to health. I saw her a few days ago, and she said she had “not been sick a day since I took her teeth away.”

Who can doubt the pernicious and even fatal effect of the masses of disease that exist in some mouths, when we consider their contaminating influence over twenty thousand inspirations every twenty-four hours, of heaven’s purifier to life itself, the blood, or the numerous nervous disorders that arise from the teeth, too often the primary cause? Is it not startling that the medical profession pay so little attention to the teeth, when they consider that the dental nerves are derived from those usually denominated the superior and inferior maxillary, which are the second and third branches of the fifth pair? Do we not at once perceive the intimate connection between the teeth and the whole body? But I will not extend these remarks. It seems but necessary to call attention to the fact, and it will of itself excite prolific thought.

In reversing the problem, with a few cursory inferences from gynæcology, with regard to the reflex influence produced upon the teeth by an unhealthy uterus, I call to mind the expression of some writer, that every child costs its mother a tooth. Now, whether this trite saying be true or not, I know a mother whose teeth were pronounced past saving by a dentist over twenty years ago; she ceased child-bearing, passed the turn of life, and subsequently I filled her teeth, with the firm conviction that my labor was not lost. My impression is that the uterus plays a more important part in the defecation of the female teeth than is generally conceded. Dr. Hall says, “There is scarcely a solid texture or fluid that is not altered from its healthy condition by amenorrhœa.” Now, anything that would deplete the blood, or give rise to an unhealthy and vitiated secretion of the fluids of the mouth, must exert a deleterious effect upon the teeth, either by producing inflammation of the gums, or by making direct aggression upon the teeth themselves; and, as the female teeth suffer most, we must hold the uterus responsible for part, at least, of these influences upon them.

After operating, some time since, for a lady, I flattered her with the remark that her teeth were much better than the average. A few months afterwards she called upon me, looking rather anæmic. An examination revealed a sad condition of her teeth,—her gums were swollen, turgid, and bleeding at the slightest touch, and her teeth badly decayed, particularly at the margin of the gums. I confessed my inability to understand the condition, but inquiry from her husband revealed the fact of a miscarriage, and to this I attributed the erosion of her teeth. Was not my inference correct? Erosion of the teeth is obviously the result of the corrosive menstrea that come into contact with them,—the acid principle being the active agent generally, if not always. I knew a lady, who died from cancer of the uterus, whose teeth during the last few weeks of her life were literally washed away. Now, what caused this abundant secretion of acid, if not the diseased uterus? Would there have been the same secretion had the disease been elsewhere situated? Is not the uterus, when diseased, prone to produce a condition of things favorable for the destruction of the teeth? And is not the uterus in a condition to exert a depraved influence upon the fluids during nearly two months in the year, conforming to the menstrual periods? Does not the offspring of a mother, suffering from any of the innumerable diseases of the pelvic organs, inherit an imperfect general organization, to hand down even to the third and fourth generation? I suppose that a child properly brought into existence, and endowed with an unimpaired vital fluid, might live on like Methuselah, and perhaps forget to die, unless by accident, or another flood. Some one has said that the original impartation of life is from the father, but the development depends upon the mother; and if she be healthy and robust, the child will be so, too, almost regardless of the father's physique. Certainly we know that the child inherits a good or bad set of teeth from the maternal, rather than the paternal parent, and that the teeth are much affected, even where a wet nurse is employed, in conformity with the condition of her teeth. To end this digression, I am one of those who do not consider that the organs of reproduction were ever designed for a source of amusement merely, but for the specific object of replenishing the earth; and I sincerely believe that their abuse is the primary cause of a great part of the disease, contracted or inherited, to which flesh is heir. Would that some competent hand would properly treat this subject for the good of a common humanity! It might disgust a Paul, or shock a Joseph;

but let the one exempt from the sins referred to, cast the first stone.  
—*Gynecological Journal*.

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## DENTAL ASSOCIATIONS.

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BY CHAS. E. FRANCIS, D.D.S., NEW YORK.

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Within the last decade of years numerous dental societies have sprung into existence with an almost magical bound. They exist in nearly every State and city of any importance in the Union. They have appeared beyond our territorial borders on this continent; and away across the broad Atlantic they are multiplying in numbers, as the large cities of Europe can testify. Prior to 1859 there were very few dental societies in the United States; perhaps none outside, or but one or two at most; now their name is "legion."

The American Dental Association was organized at the period just stated, and its influence has pervaded every part of our land; indeed, its sphere of usefulness has no limit within the bounds of civilization. It is needless to state that dental associations have been productive of great good to the profession. They have been of *incalculable* benefit, not to the profession only, but to the world at large. This everybody *ought* to know, but surprising as it may seem, there are some people so stupid or stubborn that they are unwilling to admit this fact. None are so blind as they who will *not* see, and this characteristic too often crops out in the human family.

Through the teachings of societies, dentistry has advanced wonderfully within a brief period of time. Through their influence, colleges have been established and maintained. They have infused a new spirit into members of our profession, urging them to strive for higher attainments and for greater usefulness. In concert assembled, members of the various associations discuss all matters relating to their practice, and compare the results of individual experience. They are the *nuclei* of professional and social intercourse. There suggestions are presented, theories propounded, speculations debated, and opinions advanced on the mutual aid plan, where each gives freely of the fruits of a labored experience, that all may partake largely from the rich and bountiful repast.

No one, of course, supposes that every member of an organized association is an active worker, for dentists are not different from

the rest of mankind in this respect. There are always two classes of members, the *active* and *passive*, or "workers" and "drones."

There is a difference even in the latter class, for some are more willing than able to do, while others are unwilling to work whether able or not. It is well for both classes to come into our associations, for they derive benefit at no extra cost on the part of others. They assist in contributing to the financial support of societies, and are sometimes converted into useful workers.

Useful as associations have been, few, if any, have done all they might have done for the benefit of their members or for the communities wherein they exist. Few of their members have severely taxed their energies to support and keep them in working order. Some have labored with a degree of assiduity, but even they might have done more. There is a broad field of usefulness still in the foreground. If the members of each society would work together with a will—labor patiently and harmoniously with a truly fraternal spirit—the influence they could command and the usefulness that might accrue from their united efforts could hardly be estimated or conceived.

In society gatherings, all petty bickerings and professional jealousies should be put aside. Offensive personalities should never be indulged in. Higher aims and better motives should govern each head and heart. To give and to receive instruction, with generous hearts and appreciative minds, is the grand foundation for a successful dental society. In union there is strength and a great degree of safety. A "profession" of isolated beings is imbecile, is insignificant. It has no position, it commands no respect. It can claim no rights, or possesses no power to maintain them. It plods its way through darkness with a scarcely perceptible progress. But gather together the isolated units, and what a force is secured! A snowflake is a tiny atom so delicate as to melt at the touch of one's finger, yet an aggregation of these minute feathery atoms has formed a barrier that defied the mighty efforts of the powerful steam-engine while dashing along its track of iron with a seemingly irresistible fury! So, well organized societies are the bulwarks of strength to a profession, as well as ever-flowing sources of instruction and profit. They should, therefore, be supported and encouraged by all good dentists.

If properly conducted, society meetings may be exceedingly interesting and attractive; but to be such they need some definite and decided system of action. For the want of this many societies, that

were organized with a great display of enthusiasm, have gradually lost their element of zeal, and some have apparently faded into oblivion. Now, why is this? Let us consider—in the first place, that too much time is uselessly spent in our professional gatherings. Various matters, of little or no importance, are too often introduced and discussed until the best part of a session is hopelessly lost. Indeed, I have attended meetings where entire evenings were consumed with confused arguments that to a majority of hearers were not of the slightest interest whatever, and much to the disappointment of many who had anticipated a more profitable time in listening to, or participating in, discussions on subjects previously announced, but not even introduced on these occasions. They who leave their cheerful family circles, and go oftentimes a great distance, to attend society meetings, are not willing to spend their coveted time in listening to futile bickerings. This has undoubtedly been a serious cause for the decline of many associations. The trouble should be obviated, and may be done by having an executive committee to whom might be referred all matters of a business character, and receive their sanction before being introduced at any regular meeting. This committee should act as chief engineers, and see that the machinery of the society is kept in the best possible order. Societies are often ruined by opening their doors too wide. A thimbleful of ink will injure a gallon of wine; so one or two evil spirits in a society may render themselves so odious as to drive all good men out.

Meetings often lack life. Much like an assembly of "Friends" do members sit and wait for the spirit to move them. At every meeting there should be one or more essays upon each subject for consideration. These at once enliven the occasion and call out latent ideas for ready expression.

By economizing time, part of each session might be devoted to giving clinics, relating incidents of office practice, making inquiries, asking counsel, exhibiting specimens of interest to dentists, etc.

To get an extra amount of work from members, it is well to divide up a society into committees. Let a suitable number of well-chosen members be put on each, and have them report at stated periods whatever is interesting in their several departments. Committees are often remiss, negligent, or dilatory; but if the presiding officer is true to his duty, he will not hesitate to remind them of their shortcomings.

Members are sometimes at a loss to find questions for their discus-

sions, and much time is lost in consequence. By appointing a special committee to select subjects for each session this difficulty may be remedied.

Various other suggestions might be given for furthering the interest of societies, but only one more will be noticed here. It is to appoint corresponding members from different parts of the country, and urge them to occasionally send communications on professional or local matters. One or two of these read at each meeting might be interesting and profitable, besides cultivating friendly relations in other localities.

To sum up, let every worthy dentist be a member of some organized association, and be willing to contribute something to keep up its interest. He should be willing to make a little sacrifice where so much is to be gained for himself and his profession.—*Dental Cosmos*.

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## DEVELOPMENT OF CELLS OF THE DENTINAL PULP INTO TUBULI.

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BY THOS. C. STELLWAGEN, M.D., D.D.S., PROFESSOR OF HISTOLOGY AND  
OPERATIVE DENTISTRY IN PHILADELPHIA DENTAL COLLEGE.

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In a recent work\* there occurs the following paragraph:

"Why this secretion, in its organization, should assume the position of the elongated tubular cells which pertain to the structure of dentine, I have, of course, no idea; and it is quite enough for our purpose to say that it is a law of life perhaps never to be comprehended this side of eternity, and the discovery of which would, at any rate, have but little practical signification to us."

With the author I must agree that the *cause* of the phenomenon of some cells forming tubes, while others of similar appearance are developed into intertubular structure, in our present state of information, must be attributed to the imperfectly comprehended vital force, emanating from, guided and presided over by the Creator himself.

The *effect* of this tubular arrangement within the structure of the dentine is a matter which not only seems to be deeply interesting to those who study dentistry as an art, but to that other class who are devoted to it as a science.

Two reasons have long been given for this tubular condition, that seem to be well received, namely: the transmission of nutrient fluid,

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\* A Treatise on the Diseases and Surgery of the Mouth, Jaws, and Associate Parts. By Jas. E. Garretson, M.D., D.D.S. Philadelphia; J. B. Lippincott & Co., 1869.

or the lodgment of nerve filaments, or both. These we see in the works of all writers upon the subject; but an equally if not more important reason than either has been touched upon, which, although it has existed quite as long and is no less plain than these, seems to be neglected, and remains almost unconsidered.†

The opponents of the doctrine of nerve filaments claim that hydrostatic pressure upon the pulp from the fluid in the tubuli, the waves sent along these channels, and the transmission of vibratile motions by the solid substance, would all account for the peculiar sensations of dentine, thus apparently rendering these filaments unnecessary. By Prof. McQuillen it is urged that if the pulp had such an infinite number of connections with the tubuli, it would be held firmly in position, and could no more be drawn out of its cavity than Gulliver could stand up when first he found himself bound by the Liliputians.‡

To these arguments I think might be added the effect of osmosis on the pulp through the tooth, and reflex action through the nerve; the former, as shown by the two currents between fluids of different densities through organized material, and the latter, by the familiar effects of sapid substances, as vinegar, *esc.*, upon the salivary glands.

On the other hand, the advocates of this doctrine claim that they have found fibres occupying these canals, which would be very conclusive if their opponents did not have the theory of coagulated fibrine to fall back upon. Some say that there are no changes in dentine once formed, but this is untenable; every midwife knows that a pregnant or nursing woman frequently finds her teeth suffering from softening of the tissues. Finally, others claim that there is not abrasion, or wear of dentine, and that it needs no nourishment. From a review of the above one might almost be persuaded that there is some chance that the dentinal tubuli are of very limited use and could be dispensed with altogether. Nature, however, has good and weighty reasons for forming this tissue after so uniform a pattern, and, if we search, no doubt others yet unthought of will some day be understood by all.

The architect has long since learned the lesson, which the economy of nature has taught by the hollow tubes of the long bones, woody

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† "A Course of Lectures on Dental Physiology and Surgery." By John Tomes, Surgeon-Dentist to the Middlesex Hospital, *etc.* London, 1848.

‡ See DENTAL COSMOS for October, 1869, page 524.

fibres, etc., that this is the type form for the greatest strength with the smallest amount of material and weight.

The teeth are models of strength, beauty, and perfect adaptation of means to ends ; it is no wonder, then, that nature should have brought into play her favorite style of development, destined as they are to sustain heavy pressure and severe shocks, while at the same time durability and lightness are so essential to their successful employment for the welfare and comfort of the individual.

The central cavity of the tooth, as we all know, is filled by a pulposus mass, which greatly reduces the weight, and from the tubular shape, but slightly affects the power of resistance offered by the organ ; radiating and branching in all directions from this are the dentinal tubuli, whose curvatures would seem to admit of their acting as tough and springy supports of the whole tooth, like the tubes of a boiler, or supporting the enamel as the hollow columns of a building do the roof ; the whole, bound together into a solid by the intertubular tissue, being an illustration of the axiom—"In union there is strength."

These tubes are more numerous and closely packed, as well as curved, in the permanent than the deciduous teeth, and in both in the portion of dentine under the masticating surface, and such points as receive the impact of the shocks and lie in line of the greatest pressure. Thus it would seem to be arranged with the view of being most tenacious and least liable to transmit painful jarrings to the nerves from these points.

Like the military engineer, who covers his fort with fascines, bales of cotton, hay, etc., to protect the soldiers in the bomb-proof, so nature would seem to guard her tissues of the tooth pulp. The whole is coated by a plating of the most resisting material which is in the store-house of the animal economy, the capped or conical formation of which seems to be calculated to condense or bind together the structure below in proportion as it is pressed upon, as the hoops do the staves of a barrel.—*Dental Cosmos*.

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## EDITORIAL.

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### DENTAL FEES IN CANADA.

If we compare the fees for professional services of our brethern in the United States and England, with those generally received in

Canada, we find a striking difference, greatly to our disadvantage. In Canada we find editors of influential newspapers, and intelligent men in every sphere, with less appreciation of the importance of the dental profession, than thousands of poor servant girls in the neighbouring country; and we also find a large proportion of our otherwise best informed men, much less competent to distinguish between honesty and quackery than the same class of persons across the lines. This may in part be attributed to a less frequent acquaintance professionally with the dentist, for teeth in Canada are very much better than in the United States, and there is more dentists in the city of New York, and more call for them, than in our whole Dominion. This ignorance may be traced to several causes, of which we do not purpose to speak just now; but in some measure it may be owing to the fact that Canadians have seldom had the importance of dentistry, and its just claims, properly presented to them. In the large cities there are men calling themselves dentists, who have no respect whatever for the profession; who treat it as a mere trade, though they have no hesitation about assuming the title of "Doctor"; who work very badly for very low fees, and whose existence is a constant curse to the respectability and elevation of the profession. While the respectable practitioner avoids all bombast and little, if any, advertising, these quacks rival Barnum in their humbug and advertising, and to a large mass of the people, are accepted as representing the status and worth of the profession. The mistake many honest practitioners make, is in reducing their customary fees, because a few raiding quacks advertise dental operations for next to nothing. When we teach our patients that there is no parallel between dentistry and carpentering, while there is between dentistry and medicine; that we are professional men, not only mechanics; that one cannot become a dentist by inspiration; and that there is just the same difference between the work of the best dentists and the worst, that there is between a painting by Kreighoff and the efforts of an untaught tyro; that we charge for mental as well as for any manual labor we execute, and that we do put a great deal of present mental labor, and past study and experiment into our work, then we educate our patients to understand that there is a difference between a dentist who has properly studied his profession, and one who has not; and that we have a reasonable right to charge our fees, and that we give for them a fair return. We would challenge any one either in Canada or the United States to produce a single dentist working for

low fees, who has been properly educated, either at college or by private preceptors, and who does the very best in his power for his patients. We find no fault with men who commenced the practice of dentistry at a time when there was no legislation and no association, and who, perhaps, now do honor to the profession. Let by-gones be by-gones ; but let the whole profession *now* unite cordially to raise the standard of study and practice, and to demand from the public a just recognition of our claims. With respect to fees, they will find opposition at first to any increase of price, but if they have the ability to do superior work, and can show the patients the difference between it and inferior work, there will be sufficient appreciation in the majority of cases to pay a reasonable price.

In almost every city office reputed for remarkably low charges, and extensive bombast, one may see at any time from ten to twenty persons waiting their turn to have their teeth treated ; and the "perfect experts," as the operators like to advertise themselves, think nothing of filling from one to three cavities for each of the ten or twenty in a single afternoon ! Now, if we educate the public in those principles of dentistry which will enable them to know the bad from the good, the honest from the dishonest, in the course of time there will be less discouragement to faithful workmanship, and we will receive a better equivalent for our labor. In almost every case, we will find a low rate of charges to be associated with inferior talent and inferior work. We would like to know a single dentist of any repute among his confreres—who, after all, are the best judges—who inserts artificial sets for ten and fifteen dollars, and fills with gold for fifty cents.

To sum up, dentistry in Canada is very inadequately remunerated ; that is, where one endeavours to use for his patients the very best talents and skill he possesses, which has been cultivated and trained by years of steady studentship and faithful practice. If the Canadian public desire a responsible, educated and properly qualified class of men to take charge of their teeth, it must appreciate skilful work, and pay remunerative prices. If, on the other hand, it desires the dental profession to be principally composed of quacks, and their services to be incompetently rendered, they have only to continue patronizing the "cheap dentists." Cheap dentistry is a poor speculation, because no dentist worthy of the name, can afford to work for either love or fame alone. Not to mince the matter, he must have fair prices for honest work,

W. G. B.

ERRATUM.—In the 21st line from the bottom of page 164, of our last issue, an error crept in, which we wish to correct. We made the writer of the article say “dental irritation.” It should read “dentinal irritation.”

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CORRECTION.—On page 206 of this number, appears the following: “Mr. G. L. Elliott moved, seconded by Mr. Howe, that the report be not received, and that the meeting adjourn *sine die*.’ Withdrawn.” The Secretary, Mr. Howe, writes us that that part of the report, as copied from the *Globe*, is not correct, but that the intention of the resolution was to defer the report of the Committee till a future meeting, in order that the matter might be more fully discussed.

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In our next we will give a full report of the proceedings of the Quebec Association, and also a report of the Eighth District Dental Society of New York.

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We find the following in the *Trenton Courier*:

“On the 12th inst., Mr. J. R. Irish complained of Mr. C. H. Dorland, before Messrs. Austin and Gordon for practising Dentistry without license, Mr. Dorland was fined one dollar and costs, to be paid in ten days.

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The following circumstance occurred in the practice of Dr. W. H. Elliot, so long and so favourably known in Montreal.

One day, the Doctor says, one of his countrymen, a regular Vermonter, came to him with his head rolled up in flannel, and one side of his face swelled out of all shape. The cause of his trouble was evident enough; he had a tooth with a hole in it, and was suffering with a dreadful tooth-ache. The dentist put him in his chair, and, getting hold of the tusk, had it out in a moment. The patient got up, washed his mouth, looked at the Dr., and looked at the tooth so lately his, but was evidently puzzled about something. At last he said:

“Say! stranger, is that the way you allers do?”

“Of course it is; how else could I do?”

“Wall, I thort as how you put a blast in, and blowed them out?”

“Blowed them out! You are a green varmint! How the plague could I blow a tooth out?”

“Wall, I dunnow; but if you don’t put a blast in, what do you keep tooth powder for?”

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ORIGINAL COMMUNICATIONS.

EDITORIAL NOTES ON PRACTICAL SUBJECTS.

TIN FOIL.

BY C. S. CHITTENDEN.

In dentistry, as in almost every thing else, the rage for something new has carried all before it. Conservatism seems to be entirely lost sight of. Operations on the teeth which were and are known to be of the highest character, so far as usefulness is concerned, are now, in almost every instance, discarded for something newer and more costly. I would not for a moment wish to urge a word against the most costly operations where they are required, but there is a class of teeth, for a class of patients, which can be preserved as long and as well by the use of tin foil, as by the use of gold. For instance, if a patient were presented with a large, a very large cavity, a cavity that it would take from ten to fifteen dollars to fill, on the grinding surface of a molar, and the antagonizing molar absent, the patient a person earning his or her bread by daily labor, I would most certainly advise that the tooth should be filled with tin foil, instead of putting him or her to the expense of gold. I like gold fillings, the very best gold fillings, as well as any dentist can, under what I consider proper circumstances, but when I meet with such teeth as I have indicated, which have been saved perfectly for twenty or thirty years, as I do very frequently, I am more and more firmly fixed in the opinion that a little more conservatism is required in these latter days. It has been said that if fillings in the same mouth are made

of different metals we shall excite a galvanic action which will have a deleterious effect. Such may be the case, but I have never seen it unless the two metals were brought in contact, and I do not believe it is possible that it can occur except in exceedingly rare cases if ever. I have met hundreds of mouths with teeth filled with both gold and tin, without ever meeting an instance in which a sufficient amount of galvanic action had been excited to be perceptible. The saliva acts less on pure tin than on any of the metals employed for filling teeth except gold, frequently remaining nearly untarnished for years. As a cheap filling it is infinitely preferable to amalgam, in that it leaves no sting behind.

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### VALEDICTORY ADDRESS.

BY B. T. WHITNEY, D.D.S., PRESIDENT.

*Read before the Eighth District Dental Society of New York, Jan.  
18th, 1870.*

GENTLEMEN :

The By-Law imposes upon the President the duty of delivering an annual or valedictory address. At the last annual meeting, by special request of the Committee on Essayists and subjects, I spoke of the organization and government of dental societies. I now propose to follow up that subject, by saying something of the fraternal relationship of their members, of their duty to themselves, to each other, to their patients, and to the public ; something of the principles and general working of professional etiquette ; something of the morals and manners of dentists as professional gentlemen.

The last two words of the last sentence—*professional gentlemen*—comprise the whole ground and framework of this address. It is the superstructure complete. A man entering any profession, if he has a well balanced and cultivated mind, an honest and humane heart that incites him to do unto others as he would that they should do unto him, and a good, common sense knowledge of the demands and courtesies of civilized society, is intuitively or by natural bent of mind and force of habit, *that man*. He needs no written laws, no written rules of etiquette to direct or govern his actions. But we are not in our primal state of moral goodness. The passions and dispositions of men tend to drift them apart so widely, avarice, ambition, self-conceit, ignorance that aims to be counted wise, and many other *cardinal* faults, so influence us in our relations with each other, and with the world,

that it becomes as necessary to have some recognized or written code of ethics as to have laws for the government of the business and morals of the country ; and he who violates this code, either in relation to his professional brethren or with his patients, is as amenable to his brother or the public as though he had violated a civil law of the state. Indeed, under the present law respecting dentistry and dental societies, the code as adopted becomes an absolute law ; as this society is organized and working in accordance with that law, which, with the general laws of this State, give all corporate bodies the power to adopt any by-laws, rules and regulations for their governance, and of their individual members, which do not conflict with the laws of the State ; and such enactments become absolute laws with that body. Such is the Code of Ethics as adopted by this Society. It is founded on the general principles of that unwritten high moral law which gives tone, and is known and recognized alike in all professions, commerce and trades, as well as in the common walks of life. It is the foundation, the heart and soul of civilized communities. Should we deny its legal force, we must still hold the position that no individual has the *moral* right to act irrespectively of the rights of others ; for, in a community, each individual is but a part—whole in himself to be sure—but one member of a community, while all the members in harmony, are necessary to make perfect the integrity of the whole. But, as I have already said, it becomes necessary to have written laws, and the dental profession might adopt, without alteration, the code as written by our elder sister, who is the direct and lineal heir of Æsculapius, in whose line of descent we are. The intimate relationship of the two branches of the healing art make one and the same code applicable, though that of dentistry may be regarded as still in its infancy. But is the child ever too young to be directed or governed ? This branch is really the offspring of the nineteenth century, if not actually of the present generation, and of American parentage. Though scarcely reaching its majority, or taking position in adult life, it has grown to giant proportions. In the year 1800 there were not a score of individuals, in 1820 about one hundred, in 1840, from the best statistics, about four thousand, while 1870 finds in the ranks probably about ten thousand in the United States alone, that appropriate the name of “DENTIST.” But this vast number will give but one to every four thousand of the whole population.

From the first, there were a few noble men—long live their mem-

ory—who saw in the future a great profession. They were ambitious for its early christening, and with zeal set about the work of preparation. But there were others mean enough to try to *mechanize* the calling, and lock up the avenues to knowledge. The former class worked steadfastly and unitedly, understanding their relation to each other, and their duties to themselves and the world, without a written code, and took high rank with men of letters, or of the arts and sciences ; while the latter class, in their rivalry, seemed bent on each other's destruction. These two classes are still at work, though from various causes they are brought more intimately into contact, and must assimilate. But this cannot be by bringing the better class down to the practices or the level of the bickering charlatan, but by elevating all to the recognized standard of professional men, working for a common good. This can only be accomplished by associated action under sound and wholesome rules and regulations. Among these, a standard code of ethics is a necessity ; and the moral life and professional character of every member depends much upon his living up to this code.

Our first duty then to ourselves, on becoming dentists, is proper qualification to discharge the duties that must devolve upon us as such. This cannot be accomplished without great personal effort and expense of time and money. The more intelligent public, especially in large towns, are getting to be pretty good judges of merit in dentistry ; and understand full well that avenues of knowledge are open and well supplied with the means of teaching ; and that even a prodigy cannot reach the goal of even mediocrity through the by ways. They understand, too, that dentistry is not a *trick* at the control of the wand of the magician, nor a *trade* to be learned at sight, but a *power* to deal with living tissue, that can be acquired only by time, study and practice. He who aims to climb up some other way will find the door of public favor shut against him, and that he is little better than the foolish virgins without oil in their lamps. Earlier in the history of dentistry these avenues were not open, and established system unknown. There were no dental colleges, no dental associations, few dental books, or little periodical dental literature ; so that there was some excuse for men plodding along as best they could. But a few brief years have wrought a great change ; private tuition, dental colleges and standard text books are now open to all ; and beyond these, dental associations are the next best means of obtaining correct knowledge. Here we talk of practical points and

compare notes freely. It is doubtless a settled fact, that there is no other source from which so much valuable knowledge can be obtained, and so quickly and cheaply as in these sessions. We meet on common ground as equals, and aim to tell each other what we know on particular points of practice. It has always been a mystery to me why so many absent themselves, especially the younger men, or that so little interest is manifested. We owe it to ourselves especially, to zealously support and sustain these societies for our own future good. We owe it to ourselves to improve and perfect every department of dentistry. If we see a difficult or beautiful operation, let us make the effort to equal or surpass it. If we meet, as we do every day, disease or deformity about the dental organism, it is our duty to ourselves to be able to diagnose and cure it. We owe it to ourselves to make every laudable effort to learn whatever there is unknown to us pertaining to dentistry. As a general rule men are successful in dentistry, as in other professions or business, in proportion to their qualification or knowledge of the principles of their calling, and their ability to execute well and promptly.

In fully discharging ones duty to himself, one cannot be unmindful of his brethren. As his mind and heart gets filled, his feelings warm towards his fellows, with a growing desire to unbosom himself. This feeling is found in the largest degree among the most educated men of all professions; and the contrary among the less educated and inferior classes. It is a good omen for the future that this desire for intercommunication is so greatly on the increase. We claim to be of a liberal profession, and, as such, should be liberally minded towards each other. Then as we leave this hall, let the fire so kindled, burn in our hearts while we extend a hand to every dentist in our neighbourhood, with inducements for them to come into the fold of this Society. We shall thus, not only do them good but ourselves also, by more effectually breaking down the walls of unhallowed rivalry, and bringing each other into more intimate companionship. The more intimately we know each other, the more we find it in our hearts to do each other good.

Our Society is established on the broad platform that "all regular practicing dentists at the time of the passage of the law of April 7th, 1868," may become members, under such restrictions as the members may see fit to impose by its By-Laws and Code of Ethics. All who avail themselves of this privilege are thereby recognized as dentists, and are entitled to its benefits and honors. All may not

have attained perfection in practice—some are young, though vigorous and aspiring, and with a will have seized the rounds of the ladder for an upward course. Others are weaker and need a helping hand, that should not be withheld. We should aim to assist, and not to impede their progress. It should be an *established rule*, never to speak ill or slightly of another's operations or of himself, to his patients. We often see poor operations from some of our best men, and some very good ones from those of less skill or experience. We do not know the circumstances under which a poor operation may have been performed. It is often as much the fault of the patient as the dentist. If we cannot speak well of an operation, or excuse it, it is better to pass it in silence, without a nod or a look that speaks louder than words. If all the work done is not *perfect*, do not let our fingers burn to get into the purse, at the sacrifice of justice or honor. Better advise the patient to go back and let his dentist have a chance to make any alteration or improvement. This is due to the patient as well as the dentist. I have seen many cases where a word would have secured a profitable operation; but a few moments of well directed labor has remedied an almost fatal defect,—like some slight fault in the articulation of a set of artificial teeth, where the grinding of a tooth, cutting down of the more prominent cusps, so as to give a square bite and more firmness to the plate, or prevent the sliding or jolting motion in chewing. I have gained more than money with that person; I have won his confidence and respect for honorable dealing.

As our patients are often travelling or moving from place to place, we should have confidence in sending them to other dentists, without fear of being destroyed, or the confidence abused, or all our work condemned, and a large bill run up for them to pay. We are safer in selecting the dentist from those who mix liberally with their brethren—a member of some dental association, a man who shows a determination to know whatever is to be learned, and to live up to the requirements of professional intercourse. It is not right towards others, nor just to ourselves, nor to our patients, to pretend to superiority over others; or that we possess some superior advantages or great secret by which we can do wonderful things, or even better than others; or purchase office rights of any patent, to the exclusion of our neighbours; to parade certificates of success or attainments, or flaming advertisements and show bills. They are tricks of the charlatan, and readily recognized as such by the discerning public.

There is no calling unless it is that of medicine, where greater purity of character, and a higher standard of morals are necessary. Wives, daughters and children are entrusted to our care in long and repeated visits.

We should be gentle in our deportment, and cleanly in our persons and office. We can judge full well of the nauseating effects of the foul breath that we so often meet in our patients, but we cannot judge always of our own, especially under the use of tobacco and liquors. If they are used by the dentist, the fumes should never reach the operating room, or be carried over the chair, to regale the nostrils of a patient. The appointments of the room should be attractive, and especially about the chair—napkins, instruments, and the *fingers* should be scrupulously clean; everything free from the appearance of blood stains from a recent operation, or the spittoon from exhalations of decomposition. Never go from one patient to another without first washing the hands. The office, instruments and *personnel* of the man, tell the patient at once whether he is a gentleman of refinement or not. It is due to himself, to his patients, and to the honor of the profession that all these are as perfect and cleanly as possible; besides, it is a good investment, and pays a handsome return.

The milk of human kindness should be dealt out freely. Patients come to us in suffering, and for painful operations; and under peculiar nervous excitement. Many of our operations seem like butchery, but when tempered with kindness and sympathy, they are borne even by the timid with fortitude. We find in that cheap commodity, a great panacea; and, by its free use, we are often enabled to make a good operation; when by a rough, austere demeanor, we would utterly fail. From the temperament and disposition of some patients, firmness and even authority may sometimes seem necessary; but it should be so tempered with tenderness and condescension as to inspire in them respect and confidence. While they expect to give us pecuniary reward, they expect in return to find a well educated mind that will readily comprehend the needs, diagnose correctly, and execute perfectly—not to pass over the case merely for the amount of money we may get; but, while we have an eye to that, to give them the greatest amount of good, and the least possible pain or annoyance.

We owe to the public, not only the duties of being good citizens, sustaining the various social relations of life, and sharing in the burthens and responsibilities of public enterprises and institutions, but to especially guard them against impositions in dentistry, to

direct and educate them, as best we can, in matters pertaining to the teeth: and, in every way, aim to elevate the standard of our profession. To accomplish all this, we must first keep ourselves well posted in the general news and literature of the day, as well as being familiar with the standard works and literature of dentistry; keeping our offices well supplied with dental periodicals, for their eye as well as our own; and gathering the rich harvest of practical items from dental associations; and, in fact, always being students.

The best way to guard the public against impositions in dentistry, as well as to protect ourselves, is not to encourage or manufacture and send out, to prey upon their cupidity and their purse, and bring reproach upon us, *half-fledged* dentists—men who have served a few weeks, or perhaps a few months, not of *pupilage*, but of *apprenticeship*; men utterly incompetent to deal with disease, or living tissue. By aiding this sort of practice we belie our claim to the term *profession*, and reduce our vocation to the cheapest sort of a *trade*. We sometimes hear dentists speak of serving an *apprenticeship*, or taking an *apprentice*. Perhaps the terms are most appropriate to them, if they have never studied the books, or regarded dentistry only in the light of manual labour. Under the new responsibilities imposed on us by the present law regulating the practice of dentistry, elevating us nominally into the professions, let us discharge this duty well—especially every member of this Society—by refusing to take into our offices uneducated persons; and none for anything less than a *pupilage* for the term of years as named in the law, and, if possible, make it a point to secure lectures and a graduation in a dental college. This course will, before another decade passes, rid the community of cheap dentistry and cheap dentists,—will secure for ours the position of a *learned profession*, and the public first-rate operators.

We should always be ready to give proper advice as to *hygienic dentistry*—I give it this term—so as to secure a perfect development of teeth. The prevention of deformity or disease, is of more importance than its treatment. “An ounce of prevention is worth more than a pound of cure.” Give modestly, information as to the proper time of the formation and the proper aliment of the dental organism, the care and treatment of the deciduous teeth, with reference not only to their health and preservation, but to the regularity and strength of the permanent ones. Give intelligent advice to all as to their general care, the avoidance of all nostrums clothed

with high sounding names, by the artful empiric, for "*beautifying and preserving the teeth*," and aim to be conservators and not destroyers. But in doing this do not obtrude the subject into social circles, or in untimely seasons or places. It is not to be proclaimed from the house-top, nor preached in the drawing-room. There is a proper time and place for all things.

It is questionable in what way we can best educate or enlighten the public on this subject, except as we are brought into professional contact. In some localities it has been attempted through the public press, by articles written to suit the popular taste, in a way that may interest, and at the same time benefit them. That much good may be accomplished in this direction, there can be no doubt, by well written articles, not of a professional style or character, but of practical matters within the everyday life of all. There was an inducement for the members of this Society, to demonstrate to the public the position of the Society and the legal standing of the profession, by distributing to their patients the code of ethics and By-Laws, with an abstract of the State law, as printed by this Society. A large number supplied themselves at a trifling expense with copies for this purpose. Each in his locality, and in his own way, might fulfil an important mission, without self-aggrandizement, or making himself obnoxious to his brethren.

Up to April 7th, 1868, there was no law in this or any other of the United States to regulate the practice of dentistry, or indeed, any legal recognition. The Empire State was the first to grant this. This forms a new era in the history of dentistry; and, with our more elevated position, imposes on us enlarged duties. One of the first and most important, after individual qualification, is to sustain, elevate and carry forward all the features of this law, and the societies organized under it. This is necessary for the future good of our societies, for our profession, and for the perpetuity of the law. as well as for our individual benefit. In casting the mind's eye over the country, it becomes obvious that those who are foremost in promoting dental education, and in sustaining dental societies, are acknowledged to be the *representative men*, and are taking the highest position in reputation and practice; and secure the very best class of patients and the largest fees. Let there be a healthful rivalry spring up in this direction—not to stimulate the *absorbents* only, but the *exhalents* also. It is all important that every one should *give out* as well as *take*

in at these gatherings. In doing so, each will benefit himself as well as others.

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## IRREGULARITIES OF THE TEETH.

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BY H. D. ROSS, D.D.S., QUEBEC.

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*Read before the Dental Association of the Province of Quebec.*

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MR. PRESIDENT AND GENTLEMEN :

I regret that the essay on Irregularity was not assigned to some one of you better qualified than myself to treat a subject so difficult.

There is, I think, no specialty of our profession which calls forth greater efforts of ingenuity, knowledge of the anatomical arrangement, not only of the teeth themselves but also of the contiguous parts, physiological knowledge, including temperament, the theory of absorption, ossific changes, etc., and a correct idea of expression, than does the treatment of irregularity. There is, also, I may safely say, no department of dentistry which requires more patient, untiring perseverance, not only on the part of the operator but also that of the child—and before undertaking a difficult case it is well to understand thoroughly the disposition of the little patient, and to be tolerably well assured in your own mind that the child is possessed of sufficient determination and perseverance, to patiently aid you through the difficulties to be encountered in the treatment of the case.

In the few remarks which time permits of this evening, I shall confine myself more particularly to the anatomical and physiological changes which occur in altering the position of a tooth. The mechanical treatment of these cases is so varied—almost every fresh one requiring some particular modification to suit its peculiarities, and as we have so many excellent descriptions and plates illustrating the various methods of reducing irregularity, both in our text books and in the several journals devoted to our profession, with which we are all conversant, that it will be unnecessary to occupy your time with what would be merely a recapitulation of what we have already read and studied.

Let us suppose a simple case of irregularity, in which one or both the superior central incisors have taken an abnormal position anteriorly to the other teeth. The first question which would present

itself to our minds would be, is this irregularity of the incisors an hereditary peculiarity, or is it the result of the operation of some mechanical cause. If the arrangement be hereditary the difficulty of correcting it is very much greater than if it were created by any of the mechanical causes which so often make the trouble; such, for instance, as the premature extraction of the deciduous teeth, or on the other hand the obstruction caused by the non-absorption of the roots of the milk teeth, or as is not uncommon, by the habit acquired by some children of sleeping with a finger or thumb in the mouth, and resting on or pressing against the front teeth; crowding of the teeth, owing to a want of proportion between the maxilla and that of the teeth themselves, or any of the other causes which come under this heading. The difficulty in hereditary cases of irregularity is not so much the mere moving of the teeth to their proper places in the arch, as the retaining them there once they have been drawn into their places, and unless the teeth are kept for a length of time in the desired positions, so as to allow of a firm deposit of new bone around their fangs, they will most assuredly return gradually to the direction taken by them on their eruption through the gum.

I have at present under treatment a case of hereditary irregularity in which, when first brought before my notice, the six front upper teeth projected a considerable distance beyond the corresponding lower ones, the central incisors of the upper jaw being a full inch in advance of the lower teeth when the mouth was closed. This case is rendered the more difficult in consequence of the great prominence of, and strongly pronounced alveoli corresponding in direction with that of the teeth themselves, and the malformation is rendered the more apparent in consequence of the comparative shortness of the lower jaw. In connection with this case there is a curious complication which at first I felt afraid would defeat all attempts at drawing the teeth back and into a regular arch. This difficulty arose from the left superior central incisor having, about two years before, been knocked entirely out of its socket by a fall. The unfortunate central was lost and not recovered till about an hour after the accident, then the doctor was sent for, who, on his arrival, washed the tooth and replaced it, fastening it to the others with thread, and strange to say, after a short time it united firmly with its socket. The most curious part, however, of the case is that my friend the doctor succeeded in fastening it so tight that I have never been able, with all the power that I could get on it with elastic bands, to loosen it the least. We

are all aware that in moving a tooth in the mouth a certain amount of looseness and tenderness is the invariable result, but this case is an exception. The tooth has indeed been moved back, but in moving it has brought the anterior part of the jaw with it. Thus, what at first I was inclined to consider a great difficulty, has turned out a sort of negative evil, as the tooth has acted as a kind of lever in drawing inwards the prominent alveolar process of the anterior part of the superior maxillary which was at first so unsightly.

To the best of my recollection, this is the first case reported of so singular a complication of irregularity, for though we have frequently heard of and occasionally seen cases in which teeth have been knocked out or drawn from their sockets, and being afterwards replaced, have become tolerably firm, I do not remember having heard of any case in which the displaced and restored organ became, as has the one in question, the most firmly seated tooth in the head, and decidedly as healthy in every way as any of the others. It would be out of place here, and foreign to the subject of this paper to express any opinion on the subject of the physiological forces employed by nature in the reinstating of this tooth so firmly in its place, its connection with the system evidently as perfect as ever; its unchanged color and sensitiveness on the application of extreme cold, evincing the perfect preservation of its pulp, and consequently the reunion of the nerve filament at the apex of its root with that in the base of its socket; and the very dense formation of ossific matter which must have taken place around the root. All these phenomena could be made the base of many interesting discussions, but as I have already occupied too much time in introducing this matter here we will return to the proper subject.

The first effect of pressure applied to a tooth for a given time, is to produce an enlargement of its socket, or in other words the socket being composed of porous and slightly elastic bone, the traction exerted by the appliance brought to bear on the irregular tooth causes the socket to stretch or widen in the direction of the applied force. This is the first or mechanical effect. Soon after, however, another and very beautiful physiological process is brought into operation, namely, absorption. It is an established fact that gentle pressure steadily maintained for a given time on bone will produce gradual absorption of the part so pressed against. It is this process of absorption of which we avail ourselves in the treatment of irregularity, and were it not for this stimulated action of the absorbents in removing

little by little, portions of the inner or outer alveolar plate as the case may require, all efforts of dental skill would be unavailing, and the successful treatment of orthodontia become an impossibility.

There is yet another important physiological action brought into play by this change in the position of the tooth, namely, the deposit of new bone around that part of the root which from having been moved is left unsupported. The irritation caused by moving the tooth excites the alveolo-dental periosteum and surrounding tissues, and induces an increased flow of blood to these parts, occasioning a species of hyper-nutrition, which process continues till no longer required; cell by cell the process of building up new alveolar support around the moved and loosened teeth goes on till they become firmly implanted in the newly acquired position. In the treatment of these cases, and more particularly those in which the objectionable position of the teeth is inherited, too much care cannot be taken to preserve the teeth steadily for a considerable length of time in the desired places. If the use of the plate or other appliance which may be employed to retain the teeth in the acquired situation, be discontinued too soon, the teeth will gradually work back again to their old places. On this subject Mr. Tomes remarks, "It would appear as if there were a natural law tending towards the maintenance of a conformation, when once assumed although an irregular one, and which calls into action the reproduction of a lost part more rapidly in the place in which a tooth has been moved from, than into which it has been moved." The truth of this must be apparent to every dentist of a few years experience, for we have all seen cases in which irregular and very prominent teeth have been brought into position, and which have a few years afterwards apparently become almost as irregular as ever. The cause of failure being, no doubt, the want of proper artificial support for a length of time sufficient to allow of the perfect building up of the new alveolar wall or socket around the roots. On this subject permit me to make another short extract from that part of Mr. Tomes' excellent work on dental surgery, which treats of irregularity, he says: "I believe it is in accordance with the experience of those who have devoted their attention to the treatment of irregularities, that where the front teeth have been brought in by mechanical means, and where mechanical means are required to hold them in place until they become permanently fixed, the treatment must be continued for twelve months. It may not be necessary that the apparatus should be constantly worn for the whole

period, but it cannot be wholly thrown aside. Towards the latter part of the time it may be worn occasionally only, but even after the lapse of twelve months, should the teeth show any indication of moving from the desired position, mechanical restraint must be resumed."

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### A CASE IN PRACTICE.

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BY G. V. N. RELYEA, BELLEVILLE.

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In the latter part of December, 1869, I was consulted by a hardware merchant of our town relative to a front incisor, which he told me commenced to decay on the grinding surface about twenty-two years since. He had been in the habit of "digging it out with his tooth-pick after every meal," but latterly suffering considerable inconvenience in doing so, concluded it was high time (patient soul) to consult a dentist. After a little examination of the case I found the bony structure entirely gone, indeed on one side of the wall of the fang was broken through. I considered it a doubtful case, though I made an appointment with him, hoping to find some other tooth decayed in the event of condemning the one in question. Having removed part of the accumulation, I filled it up for the time being with a little cotton saturated in tinct. krameria and cologne. He kept his appointment, and the first word he said was "the cotton you put into my tooth pained me and I took it out," from which I concluded there was no prospect of doing anything for that tooth but to extract; nevertheless I commenced to excavate, determined to "make a spoon or spoil the horn." The orifice was enlarged, and I continued to excavate the fang, avoiding the break, until I had it completely cleaned out. The opening in the side was nearly as large as a grain of wheat, and bled slightly. I washed out the cavity and introduced carbolic acid for about ten minutes, and then filled with Dr. Smith's oxychloride of zinc. I prepared him for the worst, expecting naught but evil report from it. I did not see my patient to speak to him, for ten days, but meeting him one morning, he said "that tooth is doing splendidly, it has not pained me in the least, did you intend that as a permanent filling, or only temporary?" It is now near three months since said tooth was treated, the bone filling is not perceptably worn, but which will be capped with gold should it be found necessary.

Whether a tooth that has been deprived of the nerve and lost most of its vitality otherwise, can again be restored so as to become a useful and comfortable organ, is no longer a myth but a reality ; and we furthermore hold that a dentist would be wanting in common honesty, and truant to the noble calling termed a dental surgeon, were he not to make himself fully competent to treat cases that are of such common occurrence. When consulted by a patient who is willing to submit to the treatment, and able to pay the fee, no tooth should be considered past saving, unless so far gone that nature is endeavouring to rid itself, and exclaims "Lord deliver me from the body of this death."

A case of the kind fell into my hands in the person of a young barrister. The right lower superior molar being in a diseased condition, from which he at times suffered considerably. I found a cavity on the approximate surface and the nerve quite gone, there was active inflammation in the lining membrane, and a large fistulous opening near the apex of the fang, from which escaped daily a quantity of offensive purulent matter. The case was not new to me as I had repeatedly urged him to let me treat it, but it was always deferred. The treatment consisted in a complete removal of all carious matter from the pulp cavity, and temporarily filled. I washed out the opening at the side with lunar caustic, and treated with carbolic acid for about ten days, at which time the discharge had ceased and the gum nearly closed. A healthy tone had evidently been established and I discontinued treatment, leaving nature to complete the cure. After a reasonable time had elapsed I filled the cavity with gold, which operation lasted one hour exclusive of excavating. Nine leaves of gold were used. My patient left, but unfortunately it was one of those inauspicious days termed in England "cut-throat days." I made up my mind that I had not seen the last of my patient, as from the effects of the operation and weather combined I feared an attack of periostitis. Going out on the evening of the same day, I met him promenading the street through water and snow, smoking his pipe for dear life and swearing vociferously at "that tooth." I gave him a sound lecture for his presumption in coming out in such weather, as he had assuredly taken cold, (a great scape-goat) advised him to go home immediately, promising to send a remedy that would be sure to relieve him, and accordingly put up three powders of mercurious vivus with directions to take one every two hours. He left next morning by train for neighbouring town to attend court, and I

did not see him for at least a week. He informed me that the pain gradually ceased towards morning and that he could then eat on splendidly.

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## PROCEEDINGS OF SOCIETIES.

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### QUINTE DENTAL ASSOCIATION.

BY S. T. CLEMENTS, L.D.S., SECRETARY.

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The semi-annual meeting of the Quinte Dental Association was held in Belleville, on Tuesday the 1st inst.

G. V. N. Relyea, Chairman, read a very practical and interesting address, for which he received the hearty thanks of the Association.

T. Neelands, L.D.S., of Port Hope, wishing to become a member of this Association, was accepted.

Moved by Mr. Neeland, and seconded by Thos. Rowe, M.D., that D. Murphy, Barrister, of Trenton, be appointed by this Association to prosecute all dentists practicing illegally within the limits of the Association. Carried.

On motion of Mr. Relyea, seconded by Mr. J. R. Irish, That Thos. Rowe, M. D., and T. Neelands be a committee to draw up a Constitution for the guidance of this Association, and to report at our next meeting.

After an interesting discussion on the treatment of diseased teeth, exposed nerve and their adjacent parts, and clinics by Relyea and Rowe, a lively one arose on the subject of dental fees and the propriety of a uniform provincial minimum tariff.

Upon which it was resolved and carried, That this Association appoint S. T. Clements a delegate to meet delegates chosen by other Associations, whose duty shall be to arrange a minimum tariff of dental fees for the Province of Ontario, and that the Secretary of this Association be requested to notify such Associations of our appointment, requesting their co-operation. Said delegates to meet at Toronto, and report at the next meeting of the Ontario Dental Society, on the first Tuesday in June next.

On motion it was resolved that we have our annual meeting at Trenton, on the 31st August next. Carried.

Adjourned.

## HAMILTON DISTRICT DENTAL SOCIETY.

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BY J. BOWES, L.D.S., SECRETARY.

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The second meeting of this Society was held in Mr. Chittenden's office, Hamilton, on Thursday the 17th inst., commencing at 1:30 p.m.

The President, Mr. Filgiano, in the chair. Mr. Bowes, Secretary.

The President stated that the meeting had been called together to deliberate upon several matters of importance to those dentists practicing in this vicinity, but chiefly for the purpose of arranging an uniformity of fees, and for making arrangements for the prosecution of all dentists who were practicing without a license.

A considerable part of the afternoon was taken up in so arranging the fee bill, that no injustice should be done to those living in the smaller towns and villages.

After a lengthy discussion of the subject of the prosecution of dentists who have not received a license from the Dental Board, it was moved by Mr. Patterson, of Paris, seconded by Mr. Chittenden, That the sum of \$5 be paid from the funds of this Society, to any one who shall prosecute and *convict* any dentist of practicing dentistry unlawfully. Carried.

Moved by Mr. Green, of Caledonia, seconded by Mr. Meacham, of Brantford, That the Fee Bill be published in the form of a circular for the use of the members of this Society. Carried.

Moved by Mr. Patterson, seconded by Mr. Chittenden, That our next meeting be held in St. Catharines. Carried.

Moved by Mr. Bowes, seconded by Mr. Thos. Brown, of Thorald, That in view of the fact that the annual meeting of the Ontario Dental Society is to be held in June, this meeting adjourn to meet again on Wednesday, the 21st of July next. Carried.

A copy of the Fee Bill will be sent to all the licensed dentists in the district, for their signatures, and when all have signed it, it will be published in the form of a circular, so that each one can have one or more copies for his own use. It is thought that when all have signed this Fee Bill, there will be much less competition between the dentists in the same locality, and consequently much higher fees can be obtained.

After the conclusion of the business which had been brought before the meeting by the President, a lengthy discussion was held on the subject of capping exposed nerves, in which most of those present took part, and it is very gratifying to know that a large portion of

the dentists in this district have been turning their attention to this important operation for saving the class of teeth thus affected.

As most of those present had assembled at Mr. Chittenden's office at ten o'clock in the forenoon, he kindly permitted them to witness the operation of filling a compound cavity on the posterior proximate surface of a superior bicuspid and explained to them his method of filling that class of teeth.

It was moved by Mr. T. Brown, seconded by Mr. Patterson, That the thanks of this meeting be tendered to Mr. Chittenden for the clinic of this morning. Carried.

Adjourned.

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## EIGHTH DISTRICT DENTAL SOCIETY OF NEW YORK.

BY S. A. FREEMAN, SECRETARY.

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The Eighth District Dental Society convened in the rooms of the Buffalo Medical Association at eleven o'clock A.M., Jan. 18th, 1870. The President, Dr. B. T. Whitney, took the chair and called the Society to order. There was quite a fair average attendance of the Dentists of the district.

Dr. Whitney opened the exercises by reading his report of the condition of the Society, which was represented as being prosperous, and an excellent state of feeling existing among its members.

On motion of Dr. Barrett, of Warsaw, the report was referred to a business committee, consisting of Drs. R. G. Snow, S. A. Freeman, and B. Rathbun.

Dr. S. A. Freeman was appointed to assist the Secretary in preparing a report of the meeting for publication in the city papers.

The Secretary read the minutes of the meeting held in October, 1869, which were approved.

Drs. H. B. Arnold, of Fredonia, and T. A. C. Everett, of Randolph, were elected members.

Dr. McCall, of Binghampton, being present, was elected an honorary member.

The Treasurer, Dr. John L. Daboll, of Batavia, presented his annual report, showing the financial condition of the Society to be flourishing.

On motion, the hours of the session were fixed as follows: Morn-

ing from 9 to 12 M. Afternoon from 2 to 4, and to adjourn on Wednesday at 4 P. M.

Dr. R. G. Snow extended to all the members of the Society, and their families, the hospitality of his house at 7½ o'clock Tuesday evening, which was accepted.

On motion, the hour for the delivery of the President's annual address was fixed at 12 M. on Wednesday.

#### AFTERNOON SESSION.

The Society re-assembled at 2 o'clock P.M. The annual report of the Corresponding Secretary, Dr. Theo. G. Lewis, was presented.

Dr. R. G. Snow read a comprehensive paper upon the different modes of inserting artificial teeth, touching upon the extraction of teeth, the taking of impressions, and the different materials used for plates.

Dr. Bristol, of Lockport, explained his manner of making plates of fusible metal, which process was much in vogue some few years since.

Dr. Oliver doubted the practicability of using the Adamantine Base, or Weston's metal, or any combination of metals of like character, believing that they would not withstand the action of the fluids of the mouth. He advocated the insertion of artificial teeth as soon as possible after the extraction of the natural teeth.

Dr. N. Whitcomb remarked that his experience has taught him that temporary plates are of great injury to the mouth in promoting the absorption of the alveolar ridge, and in rendering the mouth soft and spongy.

Dr. Squires, of Aurora, thought all plates were temporary, and this must be so from the nature of the case.

Dr. Barrett, of Warsaw, never used the term temporary in connection with artificial teeth. He advocated the use of Folsom's patent for plates of artificial teeth, and urged its adoption.

Dr. G. C. Daboll remarked that the mouth was temporary, and the plate permanent. Thought that the absorption of the alveolar ridge arose not from pressure, but from some constitutional cause.

Dr. Everett, of Randolph, said that any undue pressure of a plate causes inflammation of the mucous membrane of the mouth, and therefore he considered that the bead around the edge of a plate called Folsom's patent was objectionable.

Dr. Gifford, of Westfield, spoke in favor of Folsom's patent, and

felt confident it was very serviceable and practical. He had recently seen a case where red rubber had apparently produced mercurial irritation, which was removed at once by substituting the black rubber.

Dr. Barrett had seen similar cases, which he had relieved in like manner; thought some persons were very susceptible to the influence of mercury.

Drs. Stainton, Daboll, McCall, Walter, and others, joined in the discussion up to 5 o'clock, after which a few moments were devoted to the consideration of the claims of the Goodyear Dental Vulcanite Co. Many were opposed to paying royalty longer, since the company gave them no protection; while others knew no other and saw no better way than to submit to the extortion.

On motion the Society adjourned to 9 a. m. to-morrow.

#### SECOND DAY, JAN. 19TH.

The Society was called to order at 9 A.M. to-day by the President Dr. B. T. Whitney. Several members, not present yesterday, were in attendance, together with quite a number of dentists from the adjoining districts.

The minutes of the proceedings of Tuesday were read by the Secretary, Dr. W. C. Barrett, of Warsaw, and approved.

Dr. Joel Danforth, of Jamestown, was elected a member of the Society.

The subject of "The best method of keeping cavities dry during the operation of filling," was then taken up and pretty thoroughly discussed.

Dr. Bristol, of Lockport, offered the following which was adopted:

*Resolved*, That the thanks of this Society are hereby tendered to Dr. and Mrs. R. G. Snow for their very pleasant entertainment last evening, and that, at the future meetings of this Society, members bring their wives and daughters, and sweethearts for social intercourse and improvement.

The Society then proceeded to the election of officers for the ensuing year, which resulted in the choice of the following ticket:

*President*—Dr. L. W. Bristol, of Lockport.

*Vice President*—Dr. W. C. Barrett, of Warsaw.

*Recording Secretary*—Dr. S. A. Freeman, of Buffalo.

*Corresponding Secretary*—Dr. T. G. Lewis, of Buffalo.

*Treasurer*—Dr. Sohn L. Daboll, of Batavia.

*Censor*—Dr. J. C. Gifford, of Westfield.

*Delegates to the State Dental Society for four years*—Dr. G. C. Daboll, Dr. A. P. Southwick, of Buffalo.

*Delegate to the State Dental Society for one year*—Dr. N. Whitcomb, of Buffalo.

The hour of twelve having arrived, the President, Dr. B. T. Whitney, delivered his retiring address, which was listened to with great interest.

#### AETERNOON SESSION.

On assembling at 2 o'clock P. M., Dr. Bristol, the newly elected President, in a few well-chosen words returned his thanks to the Society for the honor conferred upon him, and expressed his determination to serve the Society with the best of his abilities, and to do all in his power to elevate the standard of dentistry in this district.

The Business Committee then made a report embodying the following resolution.

*Resolved*, That the By-Laws be so amended that the annual meeting shall be held hereafter on the 2nd Tuesday in May, instead of the 3rd Tuesday in January.

Also, the following :

*Whereas*, We recognize the necessity and importance of the elevation of our profession, and its proper appreciation by the public, and believing that the confidence and respect of a profession depends upon the intelligence and general qualifications of its members ; and

*Whereas*, We recognize the necessity of the more thorough education of dentists as provided for by the present State law, "to improve and regulate the practice of dentistry ;" therefore

*Resolved*, That we will not admit into our offices any person to learn dentistry, except as students, and then only for the full term of years indicated by the present law, nor countenance in others the practice so largely followed in former years of turning out upon the public incompetant and uneducated persons as dentists.

The following subjects and essayists were designated for the next annual meeting, to be held in Buffalo, on the second Tuesday in May 1871 :

"Syphilis ; its effects upon the osseous system." Essayist, Dr. L. F. Harvey.

"Best method of preparing and filling of cavities in Bicuspids." Essayist, Dr. J. C. Gifford.

"Preparation of the mouth for, and the adaptation of Artificial Dentures." Essayist, Dr. H. B. Arnold.

"Diseases of the gums and their treatment." Essayist, Dr. J. Danforth.

Clinics will be held on the morning of the second day of the session, for which arrangements will be made.

The report was received and adopted.

On motion the matter of taking the initiative steps in the formation of a cabinet of morbid specimens, and also a library, was referred to the executive board consisting of the officers of the Society.

Dr. Chas B. Brown, of Buffalo, was elected a member.

Dr. G. C. Daboll read a paper upon the "causes of the discoloration of the teeth," which was discussed by quite a number of the members.

Dr. Chas. A. Hasting, of Rio Janiero, Brazil, Dr. Joseph F. Vegas, of Bahia, Brazil, and Dr. Homer Judd, of St. Louis, Mo., were elected honorary members, and the Corresponding Secretary directed to inform these gentlemen of the action of the Society, together with its thanks for valuable information, and services rendered.

Considerable miscellaneous and unfinished business was dispatched, and the minutes read and approved; after which the Society adjourned to meet in joint session with the Seventh District Society at Rochester, in October, 1870.

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## SELECTED ARTICLES.

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### MISCELLANIES.

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BY H. SCOTT.

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*Manipulation.*—It will not be expected that all manipulators of the mouth can be equal in tact and ability; in fact, there will be found the same differences in skill and execution among dentists that exist in the mechanic arts; in music, poetry, or anything else that man attempts to do. All are not gifted alike. Some can no more than imitate what others do well with little effort. In this there will be no difference of opinion. The ability to plan, and the ability to execute, are separate talents. Many minds are fruitful in origination, whose hands can do little in putting their designs into shape and artistic finish. This, also, will be conceded. But it is not to be expected that men can, or will, find what they are best fitted for, so as to start out on the right road before entering upon life's active duties. This achievement is not likely to be reached.

But it is no part of our present purpose to analyze all men and find what they are fit for, and then assign to each his task. It is not our business to say that many have chosen dentistry for their avocation who would have made better merchants, or farmers, or lawyers: but this much it is right to say: Those who by nature have been given abilities to become good mechanics, would, with equal effort, become good dentists, generally, if due modifications be made for timidity. But there are many engaged in dental manipulations, and, without attempting to sort them out, we will say some things that may help the good as well as the indifferent operator, if acted upon,

There is less in a greater array of instruments than there is in cool, calm and patient determination to succeed; and first of all is coolness. If a man can not so command his nerves and his philosophy, as to be unmoved by the petty annoyances that arise in the progress of filling a tooth, or adjusting an artificial denture, or even extracting a tooth, he will not likely please either his patient or himself. And we shall hold that a dentist is to be wholly indifferent to the caprice, or fears, or suggestions of his patients. If he can not so feel, and so act, he will often fail. The great point is to comprehend what is to be done, and then feel that you can do it. And then again, dentists manacle themselves by attempting too much machinery, and by trying to adopt this or that new suggestion, thus giving up their acquired advantages for some new way of doing a thing, only to find themselves embarrassed and defeated in attempting to do what they had often done before, successfully. Thus, through fear that moisture will get into their cavity—before they can finish a filling—they spend all their attention in trying to keep the water away, and blunder along amid harrassing circumstances, and at last make a bad filling. In an old standard author, the writer said: "*He is a bungler who can not remove the tartar from the teeth without making the gums bleed.*" This is nonsense to a practical man. What is required is to clear the calculus away; and the more the gums bleed the better. It is simply not necessary to lacerate the soft parts in an awkward use of instruments; and a man will be the best tooth extractor who knows the anatomy of the parts, the strength of his tooth and the adaptation of his instrument, and then deliberately, and with perfect self-reliance, does his work, forgetting for the time being the prescribed rules laid down in the books. We must be entirely self-relient. Of course, written direction are not to be ignored; but they are not to displace our experiences.

But not to be in a hurry, or impatient of time, or afraid of one's own ability; these are some of the secrets of success. And the examples of seeing how other people do things in their specialties are aids to dentists.

Thirty years practice has given me confidence in myself, but the way my workmen handled their tools while erecting my new residence, during the past year, gave me some lessons that have helped me to work easier and better. Simplicity in the number and variety of instruments is better than too much complication. To reach success in any of the manipulations about the mouth, the concentrated attention of the manipulator must go with the point of his instrument; and his eye must be there too, whenever it can peer to the spot. That which can not be done is not to be attempted; and to try to do a thing like somebody else says they do it, is to abandon your way of your own that has been successful, and given you, perhaps, conscious satisfaction. This will be wrong, generally, and the cause of failure. On the other hand, we are not to discard new suggestions because they are new; they are to be tested, to see what they are worth to us. Only in this way do we advance. But if one insists that the ten ounce lead mallet is the best thing to consolidate gold with, and you are doing good work with the two ounce wooden one, don't be too ready to make the change; for if you do change you may find yourself away from home. It is not difficult to see that equally good fillings can be made with either, in different hands, or with the automaton, or by hand.

*Amalgams.*—I have not found much difference in the fitness of the various amalgams for tooth-stoppings, as they are now improved and sold. I submit a few lines on my manner of manipulating them. But first, I do not believe that good amalgam work is secured by manipulating in the palm of the hand; I am sure it is not. My method is to triturate in a mortar till there is perfect amalgamation and then to take the mass through several washings—not less than three; and this I do by continual rubbing with the pestle. I remove the mass from the mortar after each washing, and wipe the mortar and pestle perfectly dry each time. When the fluid is no longer visibly colored, then the process is finished. I have found that a large amount of heavy rubbing, with the pestle, is required to make the solidest fillings; and this I am sure is one of the conditions of good amalgam work. I squeeze all the mercury from the metal that I can, through buck or chamois skin, softly dressed. In packing, I

use heavy force, placing the metal in small pieces, and, as the surface softens under the packers, I scrape away the excess of mercury, and commence again with fresh pieces of the mass. I never can fill more than two, sometimes only one cavity with the same mixing, on account of the preparation becoming too dry to work. I have been astonished at the firmness of my amalgam fillings, and the fineness of the finish they take, both of which I attribute to the protracted trituration, the thorough washing, and the dry state in which I use the metal. Fillings of amalgam, conducted in this way, do not contract perceptibly from the borders of the cavities. I do the work as well under the saliva as in the dry cavity. The wet makes no shade of difference in the goodness of the work. Try it, and you will see that I am right.

*Tin Foil.*—I continue to use, chemically, pure tin foil for cheap fillings; but I use it only in medium and small cavities on the lateral and crown surfaces of the bicuspid and molars, where oxydation is the least likely to take place. My method of using it is as follows: I prepare it in cylinders, or balls, as firmly manipulated out of the mouth as is compatible with driving it solidly to the walls. In packing, I use heavy malleting force, both with automaton and hand mallets—being always specially careful that the foil does not get cut or mangled in the process. I make the metal as solid from the bottom to the surface as it is possible to do, and then chisel and file away to the required shape, and finish as fine as tin will take. I have found that tin fillings, when finely polished, resist oxydation much more than when left in an unfinished state; and I have been surprised, in some instances, at the amount of use they have endured without loss of substance. I think it more important to keep dry while filling with tin than with amalgam.

*Perplexities.*—How far may a dentist compromise himself in acceding to the ignorance and caprices of occasional patients?

A lad called to have a permanent molar extracted, and, with peremptory injunction from his mother that the gum must not be cut. I sent him home. In an hour he returned, accompanied by his maternal parent. She had known "*a woman who had the gum cut, and bled to death.*" I assured her that such an occurrence could not be one in one million, and that no one could bleed to death now from tooth extraction, with the means at our control for arresting the bleeding. But she was inaccessible. She wanted the tooth out, but "*the gums must not be cut.*" I dismissed them. Did I do right? I

could have taken the molar out without the lance ; but is it right to let one's self down to such a whim ?

A young miss came with a written note from her mother, requesting me to fill her teeth, but I "*must not file them.*" I requested the miss to ask her mother to call at my office ; which she did on the following day. I explained that some of the front teeth would require the file. She was firm in her objection. It would "*break the enamel and cause the teeth to decay faster.*" I suggested that the crumbling edges must be removed to guarantee good work ; and asked her if she thought it could make any difference whether they were taken away with the file or the cutting instruments. I might "*cut them but must not use the file.*" My patience was waning, and, as there was another case waiting in the sitting-room, I asked the daughter to please give up the chair. I don't know whether she found a mother that she could order or not. The girl had my sympathies ; the mother, pity.

A man of some ability, financially, sent his daughter to have an incisor filled. I found the four six year molars with pretty little cavities in the grinding surfaces. I suggested that they ought to be filled. She "*guessed father wanted her to have all done that needed doing.*" I filled them, and gave her the bill, which she asked for. The father came in a couple of days, and was terribly angry. I handed "*bored holes in teeth that didn't need it, just to get a job.*" I receipted his bill, and handed it to him. But, oh no ! he would "*pay what was right ;*" he would "*pay for the front tooth.*" I made no reply but turned to my work, and he went away. The mother came afterwards to have a compromise, by paying half the bill ; "*perhaps the teeth did need plugging—some of them.*" I made no concessions, and got no money in the case, and never will.

*A Case.*—Miss L. had an exposed pulp. It was the first left superior molar. The cavity was from the front approximal surface. The tooth was firm, and in all respects, except the decay, in good condition. Miss L. was eighteen, and of sanguine bilious temperament, enjoying very good health. I prepared the cavity well, and filled very successfully with os-artificial. There was just the usual amount of twinging after application, and the tooth did good service for about eighteen months. Upon removing the zinc filling, at the end of that time, there was seen a solid bony arch thrown over the aperture, a little elevated in the center, and very hard. The color of the crown was natural, and indicated a living tooth, but there

was found no sensibility of the dentine. I filled the cavity solidly with tin foil, using mallet force. It was a success, and would be under similar circumstances. My next card in the papers, said : "*Teeth with exposed nerves saved alive.*" For two years more nothing was wrong ; but at last she came, with a frightfully swelled face, which had tortured her for thirty hours. The tooth was removed and split open, and every indication was present that the nerve had been dead a long time—perhaps ever since the oxychloride was applied. I think so now. It was her catamenial period:—*Dental Register*.

LANCASTER, O.

## CORRESPONDENCE.

TORONTO, February 10th, 1870.

*To the Editors of the "Canada Journal of Dental Science."*

DEAR SIRS :—It affords me much pleasure to acknowledge through the medium of your well conducted and welcome Journal, the receipt of a fine large and valuable collection of specimens, presented to the Royal College of Dental Surgeons, by G. V. N. Relyea, L. D. S., of Belleville. Also some specimens from H. T. Wood, L. D. S., of Picton ; and specimens of necrosed bone containing crowns of unma-  
tured permanent teeth, resulting from a disease of the antrum, (a case of much interest, and I should be pleased to see it given in detail to the readers of the *Journal*,) by Chas. P. Lennox, L. D. S., Chatham.

And here allow me in behalf of the College and its interests, to express my feelings of thankfulness for the valuable specimens received. Also for the congratulatory encouragement, from the first announcement of its opening, and which we are continually receiving from the interested public, no less than from the dental profession, the kind and heartily expressed wish of success in this noble enterprise. But it is not all sunshine, for with this as with every other good work, there are those who from personal interest predict failure, and labor for its accomplishment. But here again, I am equally thankful for the assistance of so large a number of intelligent men whose professional services are interested in securing the welfare of this institution. And whose interests, for all must more or less contribute through their pupils to its future usefulness, in their

development to professional greatness. Here in safety I can leave it, for its success and interests are yours, professional readers.

Yours respectfully,

F. G. CALLENDER.

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*To the Editors of the "Canada Journal of Dental Science."*

DEAR SIRs:—I noticed in the February number of your *Dental Journal* an account of the case of Irish against myself, for practicing dentistry without a license. Now, not wishing to be considered by the members of the profession as an interloper, altogether, I hope you will permit me to inform them through your journal, that I applied to the Board for a license as a practitioner of eight years standing previously to the year 1868. For the purpose I presented the necessary affidavits, which were refused on the grounds that I had been in the habit of travelling, and was politely requested to eat my oath and come up for examination for the benefit of the profession. I am quite willing to submit to any reasonable demand dictated by the Board, but far from admitting that I have made false affidavits. I am not alone conversant with the fact that my practice has been quite as regular as many to whom licenses have been granted, not excepting some who are now prominent members of the Board. From a consideration of the circumstances of the case, I feel perfectly justified in practicing, and in appealing from the decision of the magistrates; and at the proper time, shall take the necessary steps to ascertain whether or not I am legally entitled to a license.

Yours, &c.,

TRENTON, March 14th, 1870.

C. H. DORLAND.

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## EDITORIAL.

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### "THE EXPOSITOR OF THE ABUSES OF DENTISTRY."

We are averse to noticing any emanations of a mind prompted by miserable jealousy and self-interest; but we cannot pass over an instance of the kind, in an article in the January number of the "*Canada Medical Journal*," by H. M. Bowker, Esq., Dentist, Montreal. In justice to the institutions he attacks, and the large majority of the Canadian profession, whom he, with most exquisite egotism, chooses to rank as unskilful, ignorant or dishonest, we feel bound to expose

the unjustness of his remarks ; expecting, of course, that those journals which gave place to Mr. B's article will publish sufficient of this refutation to show their readers what foundation Mr. B. had for his reflections. In another place we will discuss the subject proper of his paper, but here we have to deal with what may be called his personalities.

In an article on amalgam,—any other would as well have served his purpose—"the expositor of the abuses of dentistry," as Mr. Bowker calls himself, says, "when I see an institution such as exists in Toronto, with the imposing title of the 'Royal College of Dental Surgeons,' encouraging the use of such a pernicious compound, and that the same may be said of the 'Dental Association of Quebec,' I think it time that the public should clearly understand the risk the patient runs by using it. The Dental Societies of Canada, who put themselves forward as the guardians and representatives of the profession in the Dominion, not only advocate, but vindicate its use." Mr. Bowker also says that it is "a practice now almost universally adopted among dentists throughout the Dominion of Canada," and that the reasons why they use it, is because it is cheap, easily introduced, "it makes up for the want of skill and ability to use something better," and also, "from ignorance, or the want of honesty." After this "the expositor" intimates that *he* does not use it in his practice, by which, of course, we are left to the inference that he is something superior to the common herd.

Mr. Bowker is not troubled with modesty. His unblushing impudence, though, is refreshing, because it is so unique, so rare. His motives, however, will be fully appreciated by our readers when we inform those of them who do not already know, that the subject of amalgam has never once been discussed in either the college or the voluntary societies, and that all clinics in filling teeth have been done with gold. Mr. B. has consistently refused to have anything to do with the dental movement in Canada ; he was never known to do as much for the progress of his profession in all his life, as any dental society in Canada has done in one hour. He is one of the Rip Van Winkle's of the Canadian profession, and his animus towards the only dental college in Canada, and our dental societies, is easily understood. If those of our readers who see Mr. B's article on amalgam, will refer to back numbers of the "American Journal of Dental Science," Dr. Parmly's letters of 1845-47, and Dr. Watt's Chemical Essays, they will appreciate the *originality* of Mr. B's

paper. It may be here stated that every practical argument he (?) offers is at least a quarter of a century old. Yet he sends it to a respectable journal as something new.

Mr. Bowker says, and mark the imposing personal pronoun: "I know of many patients who have been treated by their physicians for certain diseases caused by amalgam plugs in the mouth, *when neither the physician nor the patient suspects the cause. Many cases of what are called "spontaneous salivation" have been produced, and are the legitimate results of the presence of amalgam plugs in the teeth, &c."*

Dr. Watt says, (page 149) "Many cases occur in which there is severe mercurial disease, *while neither physician nor patient suspects the cause. Many cases that pass for "spontaneous salivation" are the legitimate results of the presence of amalgam plugs in the mouth, &c."* Mr. B's effort to palm off the above as original is contemptible. Having deliberately altered the wording of Watt's writing, he cannot make any excuse of omission of inverted commas, as is frequently the case when plagiarism is detected.

Mr. B's intimation that he does not use amalgam, and the dogmatic assertion that all who do—and almost all dentists in Canada do, he says,—are ignorant, unskilful or dishonest, is remarkable, considering that we, in common with others, can give proof at any time, that the superlative expositor has used it, and even in many cases where the patients were able and willing to pay for gold. As Mr. Beecher says, a man should not "pray cream, and live skim milk;" and allowing that he may have recently given it up, Mr. B. should remember that "no roads are so rough as those which have just been mended, and no sinners more intolerant than those who have just turned saints." We will await further developments from Mr. B. before giving most unmistakable proof that Mr. B. cannot safely afford to assume to be "the expositor of the abuses of dentistry."

The attempt to make capital for himself and to injure his competitors by accusing our only dental educational institutions of a practice which he asserts to be ignorant and dishonest, is most contemptible. We mistake the intelligence and courtesy of the profession at large, if he finds one apologist for his unjust attacks. Let us differ as we may, and as we do, upon points of practice; but a man who makes his own rule of conduct the square and line by which to judge all others, and who is contemptuous of those who are not of his dogma or way of thinking, had better turn his quills into tooth-picks, and

be mute as a fish. He certainly should never venture into print, because then he immortalizes his narrow-mindedness. We must apologize to our readers for giving so much space to this matter; but knowing the exact why and wherefore of Mr. B's attacks, and feeling it our duty to refute his charges, associated as they were with opinions prejudicial to the private practice of those of confreres who feel justified in the proper use of amalgam, we believe that these remarks will meet with their approval. Whatever a writer may think, or pretend to think, of any method of practice, such personal charges as Mr. Bowker makes, are totally uncalled for. Having exposed himself to exposure, he must take the consequences. We hope that his like will never be known again in this Dominion,—and for the sake of dentists throughout the world, we most heartily add, nor in any other.

W. G. B.

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#### COMPLIMENTARY SUPPER AND ADDRESS TO MR. H. T. WOOD.

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We have great pleasure in copying the following from a long article in the *Picton Gazette*, and we are sure that every one who knows Mr. Wood well, will echo the sentiments expressed in the address presented to him by the citizens of Picton. Mr. Wood has taken the office lately occupied by Mr. Callender, at Cobourg.

“On Thursday evening of last week, about eighty friends of H. T. Wood, L.D.S., assembled at the Hotel of Mrs. Blanchard, in this Town, to do honor to one whom they had learned to respect. After partaking of a most sumptuous supper, prepared in Mrs. Blanchard's best style, the usual loyal and other toasts were proposed and responded to. The Dr. certainly has every reason to feel proud of the earnestness and evidences of feeling manifested by all present, in his favor. The presentation of Addresses and a magnificent Past-Masters Jewel, and the replies thereto was of the most pleasing as well as affecting character, and unmistakably gave evidence that the most pleasing relations existed between the Dr. and his fellow townsmen. The Dr. left Picton for Cobourg on Tuesday, and we trust he will meet with such success as he may be deserving of; if he does he will have no cause to regret his removal to that place. We give below the addresses and replies thereto :—

#### CITIZEN'S ADDRESS.

HENRY T. WOOD, ESQ., L. D. S.,—Dear Sir,—We, the citizens of the Town of Picton, with mingled feelings of pleasure and regret, have sought your presence on this occasion. We have learned with sorrow that you intend to remove from amongst us. Changes of this

kind are neither so uncommon or unnatural, either with individuals or in communities, that they should excite our surprise. But separations of this kind are occasionally surrounded by circumstances which present a two-fold phase. We separate with pleasure and with sorrow—with pleasure because in your case, Dear Sir, we can bear testimony to your worth as a man and as a citizen. Your sojourn with us has been marked by a consistent and exemplary walk, by christian principles and usefulness; by Temperance and an active avowal of its principles, and by giving to the promoters of the interests of our Town your valuable counsel and advice. All these are traits of your character in addition to your high standing as a Dental Surgeon, which we gladly acknowledge, and which have left their impress upon the community. But while we are glad to say so much, we are sorry to lose a man whose influence has ever been on the side of right. We indulge in a hope, Sir, that your usefulness will in no wise be diminished wherever you may go, that you may be to others what you have been to us, that our loss may be another's gain. Accept our assurance, Sir, that our best wishes shall follow you. May prosperity smile upon you. May health and happiness be the lot of your estimable wife, and may the blessing of God rest upon you as a family."

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We regret being obliged to defer the publishing of the proceedings of the Quebec Dental Association, till next number.

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OMISSION.—We omitted to state that M. Pourtier's essay on "Dental Hygiene," published in our last number, was originally written in French. It was translated by Dr. W. R. Patton, of Quebec.

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A WORD TO OUR SUBSCRIBERS.—We regret being compelled to dun, and we are sure that our subscribers who have not yet remitted, will take sufficient interest in maintaining a dental journal in Canada, to remit their \$2 after this gentle reminder. We try hard to give them more than the worth of their money, and while we do the work of bringing this periodical out month after month, we hope our subscribers will provide some of "the sinews of war," necessary to pay the printer.

THE  
CANADA JOURNAL  
OF  
DENTAL SCIENCE.

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VOL. II.]

APRIL, 1870.

[No. 9.]

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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VULCANITE COMBINATIONS.

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BY W. GEO. BEERS, MONTREAL.

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The exclusive use of either red, black or pink rubber, as a base for artificial teeth, have their separate objections. Certain objections to the red may be removed by the use of the brown or black, but the color of these is a strong argument against their use with many patients. The pink compounds would seem to fill the void; but all the light shades of vulcanite are inferior in strength and durability to the red or black, having a much smaller percentage of caoutchouc, and a larger amount of earthy matters or metallic oxides, used to tone down the original color. In 100 parts of the best English pink there is a percentage of 60 parts of fixed matter, while in the best red and black there is, in 100 parts, only from 3 to 6 of this objectionable foreign matter. The consequence is, that the worst colors are the best for all purposes. The following is the method I use for obviating the separate objections referred to, while combining any separate excellence they possess.

Put a sheet of red or black rubber in boiling hot water, and when softened, pass it through rolling mills, until it is reduced to half its usual thickness. It is better to cut the sheet in two longitudinal strips previous to rolling, as the rolling widens the sheets, and it is liable to catch and tear at the sides. If, for instance, the case is an upper set, make a paper pattern of the palatine surface of the model,

keeping it at least a quarter of an inch from the pivots of the teeth, and the back part where the plate is to terminate. Cut the red or black rubber to correspond with this pattern, and place it on the palatine surface of the model, over the air chamber. Now take strips of pink rubber, and pack them regularly under the pivots as the teeth lie in the flask. Cut a piece of pink rubber a quarter of an inch wider in circumference than the red piece, and place it properly in the part of the flask containing the teeth. Pack red rubber around the pivots, and sufficient pink elsewhere to prevent the red oozing through, and wherever it is necessary. The result, of course, is that you have red vulcanite for strength on the upper palatine surface where it does not show, and pink on the lower or visible surface. Nothing makes a handsomer "rubber" set than the two layers combined. In preparing the set for the flask, I always alter the wax to come up high to the back of the crowns of the teeth so that the depression thereby caused in the plaster, will accomodate sufficient pink rubber to prevent any red passing through. The wax model should be smoothened as well as possible, and every precaution taken to avoid much use of the bur when finishing.

I think the above method is better for all purposes than the entire use of pink rubber, as it gives the upper palatine surface of the plate the most durable, and the lower surface the most beautiful.

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### NEURALGIA FACIEL.

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BY G. O. FISET, D.D.S., QUEBEC CITY.

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Neuralgia is a disease, by which the nerves of sensation are the seat of very acute pain, confined entirely to the nervous element, and does not exercise any influence whatever on the adjacent tissues, if it did we would have more or less inflammation of those tissues which are supplied by the diseased nerve, therefore, as there are no symptoms of inflammation present, we must infer that neuralgia is an irritation of the nervous system alone, having no power to induce a morbid action of the tissues which it supplies. The vaso-motor nerves being weakened by the disease, become irregular in their action in controlling the circulation, consequently there is a little vascular excitement, attended with an involuntary contraction of the muscular fibres of the affected part; for that reason neuralgia is sometimes called *tic-douleureux*, which signifies a quick, painful impression.

In neuralgia the pain is violent, and suddenly commences at a certain spot and spreads to other nerve filaments by radiation, it may be of long or short duration, and has a tendency to recur with equal intensity on the slightest provocation.

Neuralgia faciei is an affection of the tri-facial or fifth pair of nerves, being dependent upon a constitutional derangement or a local affection ; the pain being generally felt above the orbit, in the cheek, mouth, lower maxilla, and lower teeth. Neuralgia faciei is very often dependent upon malarious fevers, and sometimes is the only symptom of that disease, the paroxysms being periodical instead of occurring only at regular intervals ; as it does not come within our province as specialists to treat those fevers, I will not dwell on the subject.

If neuralgia faciei be of a constitutional character, it is produced either by cold, over exertion of the mental faculties, or a perverted state of the digestive apparatus, which causes a sympathetic irritation of the nervous system, predisposing certain nervous centres to morbid action ; it may also be caused by close confinement, depriving the blood of the greater portion of its oxygen, thereby preventing the proper maintenance of the equilibrium between waste and repair of the tissues, in consequence, a general debility of the system ensues, which predisposes the nervous element to disease, it being more susceptible as it is the controlling power.

The mitigative treatment consists in the sub-cutaneous introduction of narcotics, warm applications to the seat of pain, and blistering. But the curative treatment would be : change of air, a sufficient amount of exercise daily, and the use of the iodide or sulphate of iron as tonics ; however, it is better to administer the medicine in the form of a pill, as the ferruginous tinctures act most injuriously upon the teeth during their passage through the mouth. The narcotics generally used are the tincture of opium, morphia and atropia, their action being more prompt when injected through the cellular tissue than if administered otherwise. The hypodermic injection may be made at any part of the body, and will produce the same beneficial effects as if the medicine were introduced at the seat of pain. There are certain conditions of the system which forbid the use of opium, those are, a high state of inflammatory excitement, inflammation of the brain, or strong determination of blood to the head, by deficient secretion from inflamed mucous membranes, as in the early stages of bronchitis, and generally by constipation of the

bowels.\* If morphia be given, the muriate or sulphate are the best to use, and the acetate when fresh; the initial dose being, for an adult man from  $\frac{1}{6}$  to  $\frac{1}{4}$  of a grain, and for an adult woman from  $\frac{1}{8}$  to  $\frac{1}{6}$  of a grain. If the dose be continued and increased, it should not go beyond  $\frac{2}{3}$  of a grain. Atropia acts upon the eye by dilating the pupil, the best preparation to use is the atropiæ sulphas, its initial dose being, for a woman, 1-80th of a grain, for a man, 1-60th of a grain; in severe cases larger doses may be administered with safety, but the largest dose should not exceed 1-10th of a grain, an aperient should also be given at bed time. The effects of atropia remain longer in the system than any medicine of its class. If we compare it with the narcotics, we find that they are all eliminated from the system in a quicker time than atropia. If we compare it with the sedatives, we find the same result. Medicinal doses of atropia of 1-20th of a grain, will produce effects that will not subside in less than twenty-four hours, and frequently they last for double that time. Caution, therefore, needs to be used in administering this remedy, and doses must not be repeated too often, otherwise the system may be overwhelmed by the accumulated influence of one dose given before the previous doses have sufficiently passed over. Unless patients can be very closely watched, it is better not to repeat the doses oftener than once in twenty-four hours.†

Neuralgia faciei may also depend upon a local affection; that is, it may be caused by periostitis, exostosis and the presence of necrosed roots in the alveoli, the two latter diseases producing inflammation of the periosteum by constant pressure, inducing an irritation of the fifth pair of nerves and giving rise to neuralgic pains, which will not be relieved until the proper treatment is adopted for the cure of the local affection, or by the removal of the cause. It very frequently happens that a patient when suffering from neuralgia faciei will point to a perfectly sound and healthy tooth, as what he or she thinks is the primary cause, for the pain is felt as if originating from that organ; however, we must not listen to what the patient says, but proceed to determine whether there are any of the teeth affected with periostitis or exostosis, or if there are any necrosed roots present in the mouth. If we find a case of periostitis, the tooth or teeth affected should be cured by antiseptic treatment. But if on the contrary

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\* U. S. Dispensatory.

† New York Medical Journal.

we find an exostosed condition of the fangs, or any necrosed roots, the only treatment left is immediate extraction. If there are no diseased teeth or roots present in the mouth, and the neuralgia is constitutional, a sympathetic irritability of the nerve filaments of the pulp of one or more healthy teeth is sometimes produced, and is felt as if originating from those organs. The same phenomenon occurs also if the disorder has been caused by the presence of diseased teeth or roots, and often after the removal of the affected organs; the paroxysms of pain often recur as if proceeding from sound and normal ones, with as much violence; that may also depend to a certain degree upon a natural tendency of the fangs of some teeth to become exostosed, which very often manifest their symptoms in that way, as well as by the bulbous enlargement of their fangs, their crowns being quite sound.

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### CAUSES OF THE DISCOLORATION OF TEETH.

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BY G. C. DABOLL, D.D.S., BUFFALO.

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*Read before the Eighth District Dental Society, January 19th, 1870.*

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A tooth rarely becomes discolored unless it loses a part or the whole of its vitality. The pulp, with its arteries, veins and nerves, is the chief source of life, and with its destruction goes the entire circulatory system of the tooth. To get at an intelligent idea of this subject, we will take into consideration the anatomy of the organ in question. Dentine or ivory forms by far the most abundant constituent of a tooth, constituting the whole of the root, body and neck, with the exception of a thin covering of enamel—the *crusta petrosa*—and pulp. In texture dentine is harder than bone. According to Mr. Nasmyth, ivory presents three varieties; the first consisting of a “regular series of fibres and cells” called fibro cellular, and regarded as the most perfect kind of ivory, forms the greater portion of the teeth of man. The second variety presents vertical canals traversing it, found particularly in the teeth of fish, and is called canalicular. The third variety exhibits little corpuscular bodies scattered through it, and is called corpuscular ivory. This is supposed to exist in the human tooth only in a state of disease. From later experiments by Mr. Nasmyth, it appears that the structure of the dentine, like that the pulp, is essentially cellular and fibrous—that is consisting of cells and fibres. Anatomists generally deny the vascularity of the dentine, but specimens that have fallen under the observation of several

prominent members of our profession seem to show conclusively that it has a circulation ; under the microscope vessels charged with blood having been seen within the very substance of the bone. Mr. Tomes makes three stages in the *formation* of dentine : the aveolar, the cellular, and the linear. From this third stage he thinks the regular continuous permanent tubes of dentine result.

The enamel covers the crown, and is the thickest upon the grinding surfaces. The color is a pearly white, and it is very brittle. The different shades of color we see in the teeth are due to the color of the dentine, and are simply the reflection through the enamel. A tooth is always the lightest on the point, and the deepest in color at the gum where the enamel is thinnest. We observe in the pearly white teeth when decayed, that upon removing the softened dentine, the surface of the cavity will be as white as the enamel ; if the tooth is of the yellow class, the cavity presents that color.

The tubuli radiate from the pulp chamber to the coronal surface, and in these we find the nerve filaments, and while it is doubted by some, it is asserted by others that these are endowed with a vascular system like that of the pulp. This is certainly possible, when we consider that filaments have been observed the 100,000th of an inch in diameter, while the tubuli are about the 10,000th of an inch in diameter.

A tooth always shows by its color the loss of its nerve centre. The change in color will be in a greater or less degree, depending upon the manner of its death. We see cases in which the pulp appears to have dried up or wasted away, and under such conditions the least change is discernible in the external appearance of the tooth ; the nerve filaments drying up in the tubuli, and only giving the enamel a lifeless opaque appearance as an indication. The greatest change is observed in those teeth in which the pulp has died from violent inflammation, and is due, undoubtedly, to the congestion of the tubuli with blood, giving the tooth a dark appearance, which becomes more intense as the blood undergoes the process of corruption and decay. The most violent and radical changes in color take place in the teeth of young persons, when the tubuli are not only larger but longer, the coronal ends sometimes terminating in the enamel ; in later life these are contracted and filled up with solid deposits.

The congestion of the tubuli is undoubtedly the cause of discoloration, as it is commonly seen by us, and this is demonstrated by the

fact that when the pulp is removed while in a normal condition and the chamber immediately filled, allowing no opportunity for the secretion of matter of any form, we have very little if any effect upon the color, as is seen in the other conditions mentioned heretofore. Another proof is found in the use of agents for restoring the color, or bleaching as it is termed. By the use of a certain class of agents, we produce an effect very quickly. In the strength they are used, such an effect could only be produced upon organic matter, with which the tubuli are filled. The discolored spots seen occasionally on the surface—or apparently just beneath—we ascribe to the absorption by the enamel while in a softened or imperfect condition, of organic matter. These we think always form in childhood, and just after the eruption of the teeth, at which time it is not unusual to find imperfections in the surface. In children that are not taught cleanly habits in regard to the mouth and teeth, food being allowed to secrete and become corrupt about the teeth, this condition would be very likely to excite the condition of their being as just mentioned.

I call to mind several instances in my own practice, in which the six year old molars present on the crowns and buccal surfaces discolored spots, where the evidence of imperfection when they were erupted is very complete and satisfactory. The yellow and dark bands sometimes seen traversing the surface of the incisors, I think are due frequently to the accumulation of tartar while the tooth is being erupted. The tooth is in a softened condition. The tartar becomes yellow and dark with accumulated secretions and age, and the enamel in its sensitive state absorbs enough to leave a permanent record for the future. The color seen at times on the teeth of persons addicted to the use of tobacco in chewing or smoking, is a stain which in time becomes exceedingly difficult to remove. In the case of smokers, like the manufacture of stained glass, it is burned on. These are all phases of this important subject, which in their different effects are troublesome cases to contend with. Of these latter one need not, however, become discouraged, as there is a sure cure in the "Chinese tooth oil," which a patient showed me a few days ago, and which he assured me made his teeth as white as he could wish them in five minutes. He acknowledged, however, that it startled him to find that it changed the color of *Litmus* paper still quicker, and he concluded not to try it again on his teeth.

## AN ESSAY.

BY A. C. STONE, M.D.

GENTLEMEN :—It is with a proper mistrust of my own ability to afford you instruction that I venture to address you on any subject at this time. It is not with any conviction that I shall render a service that might not be better given by others, but rather from a sense of duty that the humblest member of society owes to himself and to those with whom he may be associated, always to use at all times his best endeavor to do what he can to promote a common object.

Our society was not, I presume to say, formed for the purpose of displaying mere theoretical knowledge, but rather that of interchanging the practical results of common experience.

The subject chosen for this evening is the management of children's teeth, both of the first and second dentition, and the duty of dentists and parents in the premises. It is not only the duty but the true interest of every dentist to as far as possible, educate his patients to perform properly their own part in reference to their teeth, and those of children placed under their care. But it is not to be expected that patients will enter upon the study of dentistry either for the benefit of dentists or themselves, and it is therefore necessary for the practitioner himself to induct them into so much knowledge as shall be sufficient to smooth their road, and his course.

Beginning at first principles and with special regard to the comfort and future welfare of children, the patient should be initiated into the sublime mysteries of the first dentition. It will soon be found that the popular ignorance in regard to the formation of the human body is in no case more manifest than in regard to the teeth. For instance, not one in a thousand (and among that number I am sorry to say are included some dentists) is aware that at birth the jaws of a child contain the rudiments, more or less developed, of 52 teeth; 20 temporary and 32 permanent.

Let it then be understood by the parent, that at the time of birth each child is endowed with the bodies of ten teeth in each jaw, which begin to make their appearance through the gums at about the sixth or eighth month. That the obtaining of the full set of temporary teeth varies in time up to two or three years, and that during that time the germs of the permanent teeth are being steadily developed, ready to fill their places when their work shall have been accomplished. If it shall then be understood that the regular and proper

development of the permanent teeth depends somewhat upon proper care being taken of the temporary set, the necessity for the most careful observation and attention will at once be made obvious. Of the temporary teeth there are four incisors, two cuspidati, and four molars in each jaw, which are finally replaced by the permanent set, beginning at about the seventh year, and continuing until about the twelfth or fourteenth year, when the permanent set is complete, with the exception of the wisdom teeth. The permanent set consists of four incisors, two cuspidati, four bicuspidi, and six molars in each jaw—thirty-two in all.

Having thus been made acquainted with the names and numbers of the teeth, it is necessary to instruct as to the manner in which the permanent set succeeds the temporary. The question is often asked why men and animals require two sets of teeth, and not two sets of nails, hoofs, and claws. It is a query that but few persons are at first prepared to answer; but a little reflection will solve the problem, and that is, that the teeth alone, of all the tissues and organs of the body, are the only ones that do not increase in size or bulk after they are once developed—that is to say that the crown never enlarges; the root is sometimes enlarged by disease.

At about the age of three or four years the jaws begin to increase in size and length, and it seems to be a very wise provision of Nature that a new set of organs of corresponding size and of sufficient number to fill the room made for them, should be given.

The jaws increase in length behind the temporary teeth, pushing these teeth and that portion of the jaw which contains them forward without changing their relative position to each other, the front of the jaws enlarge only as the teeth of the permanent set make their appearance; if any teeth of the first dentition remain in their place until mature age, the jaw around them will also remain of the same size that it was in infancy, as is shown by their having no spaces between them. Sometimes in the case of dwarfs all or nearly all the teeth of the first dentition remains.

The germs of the permanent teeth (with the exception of the molars) are situated under the temporary, and in the process of their growth absorb the roots of the temporary ones until the latter are driven out of the gums, and their places taken by the permanent teeth, in the following order:—

At about the sixth year the first permanent molars make their appearance above the gums at the back of the temporary teeth, where

the elongation of the jaw has given sufficient room. These first molars are so frequently mistaken for a portion of the temporary set, and such unhappy consequences sometimes result from this error, that the attention of parents should be particularly directed to this point. These teeth are sometimes permitted to go to decay from want of care, and under the impression that they are the temporary teeth. Sometimes they are extracted for some slight cause, when the whole arch of the jaw becomes imperfectly developed, and the most painful and tedious cases of irregularity are often the result. These teeth are the pioneers and guides of the new set; they stand as landmarks in the jaw, and their extraction or loss by any means may be compared to the capture of the outlying pickets of a sleeping army, in disastrous consequences.

The first molars should be preserved if possible. There is no estimating the value of a tooth. The illustrious Don Quixote had a very good idea of it when (after one of his hard-fought battles, in which he lost a number of them) he says to Sancho Panza, that he had rather they had torn off an arm, provided it was not the sword arm. He then adds:—"For thou must know, Sancho, that a mouth without teeth is like a mill without a stone; and that a diamond is not so precious as a tooth." However, that was long before the days of rubber plates; he might possibly change his opinion were he living now.

Another point worth notice: These teeth—that is, the first molars—seem to be placed in the exact position where they are most needed, as the temporary teeth are falling out and the office of mastication must be performed somehow, and falls naturally upon these powerful grinders so admirably placed to perform their allotted labor.

Sometime between the ages of six and nine years, according to the health and strength of the child, and after cutting of the first permanent molars, the lower central incisors make their appearance. Next come the upper central incisors; then the lower lateral incisors, and next the upper laterals. This is the usual order, although it sometimes varies. Nature now takes a short period of repose, lasting some two or three years.

Between the ninth and fourteenth years the bicuspid and canine teeth make their appearance, generally in the order mentioned. Finally appear the second molars, soon after the canines, or at about the age of fourteen, and then the set is complete, with the exception of the wisdom teeth, which are cut anywhere from eighteen to sixty

years of age—sometimes not at all, when there is no room for them in the jaw.

During the period of shedding the teeth, if a mother has the least pride or ambition that her children shall have beautiful and regular teeth, it will then exhibit itself, even though she may have been before careless in the matter. It is above all necessary that nature should have fair play, and not be retarded, driven, or misled in her movements by any carelessness of treatment which shall permit disease or irregularity in the temporary teeth to operate against the regular and natural appearance of the permanent set.

Parents should be cautioned with regard to the too early extraction of the temporary teeth, since if they are drawn before the permanent ones are ready to take their places the jaw will not sufficiently lengthen, and an irregular and deformed denture will be the result. If they seem to need professional attention they should be placed under the care of the dentist. I consider it quite as necessary to preserve the teeth of the first dentition in their places while they are needed, and take as much care of them as of the second set. They should be treated in all cases in a similar manner. If they are decayed fill them, if the nerve is exposed destroy or cap it, and then fill. If they have gum boils treat them as you would teeth of the second set. Of course you will not always succeed in healing the fistulous opening, but that is not of much consequence; relieve the pain if possible and retain the tooth. A gum boil is not of much account in children unless it interferes with the general health, and this must be left to the judgment of the dentist. The fears of parents should have nothing to do with it.

To the miserly skinflint dentist who, rather than lose his fee of half a dollar, will pull a child's tooth two years too early, without good and sufficient cause, the above advice will be lost. But to him who, being a dentist, does not forget that he is also a man, and who does not cease to remember that to alleviate pain and prevent deformity is the true destiny of his calling, and that his recompense therefor is only secondary, it will carry something of the intention with which it is given. The responsibility then devolves upon the dentist of impressing upon the mind of his patient the great importance of not tampering with the extraction of children's teeth, and also that the teeth of the first dentition, as well as those of the permanent set, should be kept perfectly clean, in order to preserve them in a healthy condition as long as they are required in the mouth.

Let them be instructed that this attention and care should not alone be confined to the permanent teeth, which are better able to bear the dangers to which they are exposed; but that the temporary set depend greatly for existence upon the attention which they nearly always fail to receive.

All that is necessary to do is to be as scrupulous about keeping the teeth clean as the face. If parents could be made to understand how much pain could be prevented and spared their little ones, and the long and wakeful nights they are often compelled to pass, the many dollars to be expended for regulating and filling teeth, and in fact the thousand ills that might be avoided by timely attention, we are sure that they would be thoroughly awake to their duty.

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## PROCEEDINGS OF SOCIETIES.

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### DENTAL ASSOCIATION OF THE PROVINCE OF QUEBEC.

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A meeting of the above voluntary Society was held in the city of Quebec, on January 20th and 21st, 1870.

Present—A. Bernard, J. McKee, P. Baillargeon, H. D. Ross, M. Pourtier, W. R. Patton, J. A. Bazin, J. H. Webster, J. Turcot, —. Casgrain, G. O. Fiset, W. G. Beers.

The President in the chair.

Mr. Beers gave notice of motion to change the name of the Association, as it was frequently confused with the Board of Examiners.

The President and Treasurer were appointed a committee to arrange for the collection of specimens of morbid anatomy of the head and other parts relating intimately to dental surgery; to be kept alternately six months in the cities of Quebec and Montreal.

The President then called upon M. Pourtier to read his essay on "Dental Hygiene." An excellent English translation was read by W. R. Patton, and afterwards M. Pourtier read it in French.

The subject was opened for discussion.

P. Baillargeon referred to the use and effects of sugar upon the teeth; and especially to the fact that confectioners, as a rule, lose their teeth early. He believed the sugar prepared by confectioners to be much more deleterious to the dental structure than the sugar from the refinery. He thought the coloring matters of candies had an injurious effect.

J. McKee cited the West Indian and Southern negroes, who eat

largely of sugar, and yet whose teeth are unsurpassed for durability. He held the same opinion as Dr. Baillargeon, viz.: that confectioners' preparations of sugar acted most injuriously.

J. A. Bazin had had considerable experience in connection with confectioners who had lost their teeth early. He mentioned a number of cases in his own practice, and believed that the temperature of the sugar had greatly to account for any effect it may have upon the teeth. Confectioners and their employees were in the habit of tasting boiling sugar to test it, and many of them ate it because of its superior taste. He related a case of a young man nineteen years old, whose business was to test boiling sugar, the enamel of whose teeth at the margins was entirely destroyed.

W. G. Beers does not believe that sugar has any immediate or direct effect upon the teeth. If used moderately, he thought the principal secretions of the mouth, which are normally alkaline, would have the effect of neutralizing any acid that might form; but if used in excess, the sugar then fermented in the mouth, and secretions were produced which disintegrated the enamel and dentine. Acetic acid is formed in the mouth, which has a strong affinity for the tooth structure.

W. R. Patton said that sugar, like starch, was one of the principal constituents of our most nutritious food, and that if the mouth was properly cleansed, it would have no harmful result.

H. D. Ross believed that even sugar in excess would have no baneful effect, if proper attention was paid to hygiene. It nourished the tissues, and was, he would submit, a necessity for healthy action of the nutritive vessels.

J. A. Bazin inquired the cause of the pain when a grain of sugar is taken into a sensitive cavity of a tooth.

A. Bernard believed it to be a chemical cause; that an acid was immediately produced, and had an instant effect.

W. G. Beers believed it to be altogether mechanical, similar to the effect of a grain of salt, which could not produce an acid.

J. McKee thought it was both chemical and mechanical.

J. H. Webster instanced an experiment he had made, by keeping teeth in a syrup of white sugar for over ten years. He found the teeth as perfect as ever. He believes sugar to be a preservative.

P. Baillargeon said the normal condition of the buccal secretions was preservative of the teeth; but that fermentation of sugar, or any foreign substance, changes their character, and hence the cause of caries.

W. G. Beers doubted if Dr. Webster's test was reliable; as the syrup in a bottle would always remain sugar syrup, in spite of the teeth; but in the mouth, bathed by the secretions, it could produce changes which would destroy the structure. Combined with a small amount of alkali, which is found in the mouth, sugar will dissolve phosphate of lime.

H. D. Ross said the coloring matter of candies was frequently carbonate of copper, vermilion, red lead, &c., which in themselves are deadly poisons.

Dr. Bernard made an interesting resume of the discussion.

H. D. Ross then read an essay on "Irregularities," and a lively discussion ensued relative to some portions of it; but as it was almost entirely conversational, and branched off into many physiological and pathological questions, we regret that we cannot give any report of this part of the proceedings.

In the evening the Quebec dentists entertained their confreres at the Russell House, in the hospitable manner for which the citizens of the ancient capital are celebrated.

#### JANUARY 21ST, A. M.

A number of models of peculiar cases of Irregularity were presented by H. D. Ross, J. A. Bazin, M. Pourtier and W. G. Beers.

The subject of "Filling Teeth" was then opened.

J. A. Bazin believed in rapid wedging. Found great convenience from the use of hoe excavators for preparing cavities in all positions. Often uses a common excavator to advantage as a plugger, in filling small cavities. He generally begins filling with soft foil, and finishes with adhesive. Thinks that there is too great a rage for adhesive foil.

W. G. Beers inquired if Mr. B. had seen any evil results from rapid wedging.

J. A. Bazin had once a case of exfoliation of the transverse process of the superior central incisors, about three-eighths of an inch long, which was occasioned by the too rapid use of a wooden wedge. He does not altogether ignore rubber for separating.

W. R. Patton uses oxy-chloride of zinc in very sensitive cavities, and in a week or ten days, finds that the sensitiveness has passed away, and that the excavating can be completed and the cavity filled with gold. He referred to the rubber dam; uses it in strips of from five to ten inches square; placing a towel around the neck of the patient, and allows the saliva to flow out of the mouth. Ties the

rubber down with waxed cord ; generally embraces with the rubber a tooth on each side of the one to be filled.

H. D. Ross explained his manner of filling approximal cavities.

P. Baillargeon thought that after rapid wedging, extreme tenderness of the tooth would be found to exist after it was plugged. He feared the results from all severe measures upon tender teeth.

J. H. Webster was particular to adapt means to circumstances, and met with cases where he would not use more rapid wedging, than the patient could produce by working between the teeth cotton wool, from day to day. He uses Abbey's foil ; and has used it a great many years.

M. Pourtier has a high opinion of adhesive foil, and can use Johnson's No. 3 and 4 in all cavities.

J. McKee described his use of creasote and other articles for obtunding sensitive dentine.

J. A. Bazin uses White's foil ; also Hubbard's.

W. G. Beers related a case of a patient who invariably fainted after the first few scrapes of the excavator. He tried chloride of zinc, creasote, &c., but all of no avail. After the fourth trial, he used Rhigolene spray, and succeeded in excavating the cavity without any trouble. Had that failed he intended to let the patient faint, and continue working notwithstanding. He read a paper on "The use of the Hand Mallet," and exhibited a leaden mallet, and a number of instruments presented by Dr. W. H. Atkinson. He also presented his improved duct compressor, which has the advantage of closing both parotid ducts at the same time, without the compressor interfering in any way, while both cheeks were kept pressed outwards during the entire operation.

Dr. Bernard said he had listened attentively and enjoyed the remarks of the several speakers. He regretted that the time was so short, and the discussions necessarily so digressive, but he doubted not but that every member of the Association had been benefitted by the reciprocity of opinion, and the mutual disposition to reveal every particular method of operating in which individual members felt they excelled. It was gratifying to see the spirit of isolation and secrecy dead. He hoped that the members would always prepare themselves beforehand for the various discussions.

The meeting then closed by singing "God Save the Queen."

## WESTERN DISTRICT DENTAL ASSOCIATION.

BY CHAS. P. LENNOX, SECRETARY.

The second meeting of the above Society was held at Dr. Stone's, in London, on the evening of the 9th of March.

There was a good representation of the dentists of the district present. Several topics of interest were discussed. An interesting essay was read by Dr. Stone, subject "The Management of Children's Teeth." The evening was very agreeably spent until a late hour, when we adjourned to meet at the call of the Chairman.

After the meeting was over we were requested to indulge in a cup of coffee with our esteemed host and hostess, which we did with pleasure, and separated.

## SELECTED ARTICLES.

## INTERDENTAL SPLINTS FOR FRACTURES OF INFERIOR MAXILLA.

BY GEO. L. FITCH, DENTIST.

Interdental splints in various forms have been used for many years, but owing to their complexity or to the difficulty that any one but a skilled mechanic would find in manufacturing or applying them their use has been limited. Undoubtedly the best of these appliances has been the vulcanite splint used of late years, but the objection to this is, that none but a dentist could apply it, and but few dentists would be able or willing to take the responsibility of treatment in these cases.

Prof. F. H. Hamilton, M. D., many years ago proposed the use of gutta percha, a wedge shaped piece of this material being softened in warm water and placed between the molar teeth on each side, and then moulded around the crowns of these teeth with the fingers, while a bandage around the chin and over the head completed the dressing. The jaws being held apart by the gutta percha, food could be introduced between the front teeth. Other surgeons have followed in his track with the use of gutta percha, but the jaw, with all the different plans, was held firmly in one position.

The advantage which vulcanite splints have had, is in allowing the patient the use of the jaw while the broken fragments are still

held firmly in opposition ; their disadvantage, as stated above, the difficulty of applying them. I have recently succeeded in applying gutta percha to the same use as vulcanite, and a brief description will, I trust, put interdental splints into the hands of every man in the profession. Take a piece of dental gutta percha of length sufficient to reach around the dental arch as far back as the second molars on either side, and of width sufficient to reach one or two lines below the crowns of the teeth, resting on the gums when it shall have been moulded to its place. As this variety of gutta percha comes in thin sheets, two thicknesses may be used, a little heat and pressure with the fingers converts them into one. Now, the broken fragments being held properly in place by an assistant, dip the gutta percha into water heated to a little below the boiling point, and while it is softened by the heat, mould it gently around the teeth and gums ; as it hardens quickly, possibly it may have to be dipped the second time in the hot water before it can be nicely and smoothly adjusted. Allow it to remain in its place a moment or two, and then withdraw it and dip in cold water, and if there be any superfluous portions they may be clipped off with the knife or scissors. Next take two pieces of iron wire, a little less than ordinary telegraph wire in size, (and these should be previously prepared) and bend them into the shape of a horse shoe, or more like the letter V, with its angle cut off somewhat. Flatten out one end of this wire until it is about two thirds as wide as the splint where it goes over the molar teeth ; heat this flattened portion a little and lay it on the gutta percha ; the flattened portion should extend as far as the end of the splint and as far forward as the angle of the mouth, through which it should protrude, and then bend backwards on a line with the outside of the cheek, and make it (the wire) as long on the outside of the mouth as on the inside. The wire being somewhat heated will readily press its way a little into the splint, and with a thin piece of gutta percha placed over it and smoothly plastered down, our design is completed. The wire outside of the mouth may be bent into different shapes so as to be more readily fastened to the piece of leather or pasteboard which goes under the chin. This latter piece in this, as in the vulcanite splint, being made to fit the under surface of the jaw, and securely fastened to the wire on either side. If I have succeeded in making my description plain, I think any surgeon could in this manner easily construct an interdental splint equal in every respect to vulcanite, and at an expense not to exceed twenty-five cents. The

gutta percha exerts no deleterious influence in the mouth any more than the vulcanite does, and it may be taken out and washed frequently to insure cleanliness. Dental gutta percha may be had at any dental depot, and of the majority of dentists throughout the land.—*N. Y. Medical Gazette.*

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### SENSITIVE DENTINE.

In those cases where the most exquisite torture is inflicted on a patient by the excavator, which could not be relieved immediately by the usual remedies; I have found the following practice very satisfactory both to patient and myself:

Cleanse the cavity gently with tepid water, and remove so much of the decay as can be with the willing consent of the patient. Then plug with the "osteoplastic," or "ox. chlo. zinc." The plug may remain from a day to three months. In some cases one day helps the matter very much. If the dentine is hard, a day is as good as a week. But if it is soft then two or three months is better. In the latter case see that your patient uses a diet containing vitalized lime salts in abundance. By vitalized I mean those salts which are found in vegetable or animal tissue naturally.—*Missouri Dental Journal.*

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### A NOVEL CASE AND TREATMENT.

BY DR. S. J. COBB, NASHVILLE, TENN.

A lady, who was so unfortunate as to lose, at the age of twenty, all of her upper teeth except the three roots of the second left superior molar, over which she has worn a plate for ten or twelve years, called upon a dentist a short time ago for the purpose of having her plate refitted, and he very naturally suggested the necessity of removing these loose roots from the mouth, which she readily consented to, and in his efforts to remove them pushed them up into the antrum. The operation becoming a little painful to the patient and frightful to the operator, was no longer persisted in, but in about eight hours from that time they were blown out at the nose.

I presume the floor of the antrum covering these roots had been necrosed and partially exfoliated for two or three years, from the fact that she has since called upon me to operate and treat for diseased antrum. In diagnosing the case, I found from necrosis and

exfoliation not only the floor of the antrum covering these roots destroyed, but a portion of the ethmoid and inferior turbinated bones, making an opening sufficiently large for these roots to pass into the nasal fossa, from which they passed out at the nose. I also found there had been a constant, copious fetid discharge through the nose for five years, following an attack of erysipelas of the face.

In operating I removed all of the necrosed and exfoliated bone, after which I passed well up into the parts a small piece of sponge thoroughly saturated in two parts carbolic acid and one of tinc. of iodine. I then diluted with soft water the acid and iodine solution, and syringed the parts well and sent my patient home, with directions to use as a wash for the parts, the compound of acid, iodine and water, also to keep the parts well cleansed with tepid water, and take in the way of general treatment, ten grains of blue mass, followed by one or two doses of citrate of magnesia, after which to take three times a dose of twenty drops of syrup of the iodide of iron. For two or three days after the operation the discharge slightly increased as I anticipated, having used the strong solution of acid and iodine for the purpose of producing a sufficient sloughing to bring away such small detached pieces of bone as might remain somewhat attached to the soft parts. In the course of a week the discharge commenced decreasing rapidly, at which time I fitted a plate and teeth to the jaw, covering the part well for the purpose of keeping particles of food and other matter out of the antrum.

At the end of twenty days treatment the discharge ceased entirely, and upon examination the secretions were found to be as healthy as they ever were.—*American Journal of Dental Science.*

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#### INSERTING THE GOLD.

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CASE.—Anterior approximal surface of the right upper third molar. Dovetail slot cut from the grinding surface of crown up to the margin of the gum. Soft wedge between the teeth to compress the gum. Rubber dam not required.

Place a cylinder of unadhesive gold, whose diameter is equal to the bucco-palatal diameter of the cavity, in the bottom of the latter, one end of which shall press against the posterior wall of the cavity and the other end against the surface of the second molar; compress this cylinder laterally, and place another by its side; now with a

foot-shaped plugger having serrations condense with the mallet, thoroughly.

Put a *very thin* section of Morgan's plastic gold upon the condensed surface and mallet again.

The foundation which is now laid will not be likely to move, if it is sufficiently condensed. Too much care cannot be exercised in this respect. It is of the greatest importance that the cervical margin of the plug should be *perfect*. No after manipulation can correct a faulty margin in this locality.

The cavity described can be better plugged with two different sizes of foot-shaped pluggers than with any others. They should have shallow but very sharp serrations. The toe of the instrument should be slightly rounded and polished, so as not to abrade the dentos\* as it slides against it.

This cavity will be best plugged with heavy or thick foils ; No. 30 may be used in strips one-eighth of an inch wide and one inch long. No. 60 in squares, not much larger than the diameter of the cavity. Take up No. 30 with the pluggers in the middle of the strip or at the ends, indifferently, and attached to the previously condensed gold. Anneal each strip by carrying it *over* the alcohol flame. Condense *single* thicknesses in succession against the sides of the cavity, and *particularly* against the margins, so as to make them as *perfect* as possible. In the centre we may fold or crumple it up indifferently remembering that with increased thickness under the plugger we must have increased mallet force.

We can use No. 60 alternately with No. 30, if we choose, and using two or three squares of the former at once, as they will readily adhere to each other and to the previous surface if properly condensed. If the margins of the cavity have heavy walls we can safely use No. 60 at the margins, though I can see no particular advantage in this heavy No. in *this* cavity. We don't wish to keep one portion fuller than another ; it will be better to keep a nearly level surface. At any rate do not fill the interior of the slot more rapidly than you do the marginal surface. Carry the gold well out beyond the surface of the tooth, so as to leave plenty to file off and work down afterwards. Keep the shaft of the plugger paralled with the perpendicular margins of the cavity. Let the foot-shaped plugger slide along these surfaces and carry down the gold strips. Always allow the strips to

lie between your plugger and the dentos, thus securing more *perfect adaptations*. If there should be any overlapping enamel, when it is reached we must be careful that we do not arch over or bridge the under cut. Take the curved hatchet plugger and carefully manipulate into the corner or crevice single layers of Nos. 15 or 20 foil, using hand or mallet pressure, according to safety, being sure to thoroughly *support* this overhanging enamel, with a solid foundation.

The gold plug should be well carried out beyond the grinding surface of the tooth, so as to insure sufficient thickness for subsequent removal for the purpose of finishing. Be careful not to draw in the approximal surface of your plug, as you build up to the triturating surface. If it is kept squarely out *all the time*, it will be stronger and bear the force of mastication much better, than it will, if you build it out of the slot. In the latter case it would be more likely to scale off. When enough gold has been used, go over the whole surface with a very small, round plugger, having only enough serration to prevent the instrument from slipping, so as to thoroughly condense the gold and obliterate the indentations. Now file down to nearly the finishing surface and condense in the same manner. File again, and then polish with abundance of pumice stone and a stick. After getting a good surface, use prepared chalk and alcohol with a stick.

I expect in a few weeks to have an instrument, which will revolve a burr one thousand times in a minute. With this I intend to finish my plugs in very many localities.—*Missouri Dental Journal*.

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#### NECROSIS OF NEARLY THE WHOLE OF THE LOWER JAW.

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Egbert H., aged 22, from Aylesbury, was sent to Mr. Heath by Mr. Ceely, with necrosis of the lower jaw.

In August, 1868, he had typhus fever in Walsall Union, and during the attack the face became swollen, and discharged both externally and into the mouth. His teeth were all loosened, but none were extracted. In December he was passed on to Aylesbury, and came under Mr. Ceely's care.

On February 24, 1869, patient was admitted into University College Hospital, under Mr. Heath's care. The right side of the lower jaw was immensely swollen, and two inches below the angle was a sinus through which a probe passed up towards the base. Another

sinus existed below the right canine tooth, and there had been a third below the left angle which was now closed. The teeth were all more or less loose, and there were several openings in the gums, from which a most offensive discharge passed into the mouth. The man was well nourished and otherwise in good health, though he had when a child suffered from hip disease. On the day of admission, under chloroform, Mr. Heath extracted the molar teeth of the right side which were loose, and, having divided the gum, extracted a very large sequestrum, comprising the right side of the body of the jaw from the canine tooth to the angle, and containing the mental foramen. The hæmorrhage was very free, but was checked by plugging the shell of new bone from which the sequestrum was taken. The plugs were removed on the second day, and the mouth syringed out daily with disinfecting lotion.

On March 3, 1869, under chloroform, Mr. Heath cleared out some small fragments of necrosed bone left in the right angle of the jaw, and then proceeded to remove the necrosed portion on the left side, which extended as far as the second molar tooth. Mr. Heath attempted to save the incisor teeth, it appearing at first that the alveolus of that part of the jaw was not involved. It proved, however, that the disease had affected the whole thickness of the bone, and the teeth were necessarily sacrificed. Upon removal of the sequestrum there was left a complete framework of new bone, with a deep groove extending from the right angle (which was quite hollowed out) to the second molar tooth of the left side. The mouth bled freely, but this was checked as before by stuffing with lint. The patient made a good recovery, and was able to return to the country in a week, the discharge having almost entirely ceased, and there being a deep groove in the new structure of the jaw from which the sequestrum had been extracted.

On June 16 the patient returned, there being a portion of diseased bone on the right side. This Mr. Heath extracted, under chloroform, with some difficulty through the mouth, when it was found to include the angle and a great part of the ramus of the jaw. From this operation also the patient made a speedy recovery, and returned to the country, and was not seen again by Mr. Heath until October, when he returned with yet more necrosis, involving the remainder of the right ramus. This was removed with difficulty on October 30, and the man has not since suffered from pain or discharge, so that it seems that the whole of the dead bone has now been taken away.

Perhaps the most singular feature in this case is the fact that the man has now (December) as perfect movement of the jaw as if no disease had existed, notwithstanding that at the last operation the whole of the right condyle was removed entire with about a third of the ramus. The repair has, in fact, been as complete as possible. When we saw the patient five weeks after the last operation, there was some fullness and prominence about the right angle of the jaw, and when the mouth was widely opened the lower jaw was drawn slightly to the right side ; but otherwise all the jaw movements were perfectly performed without any pain or inconvenience, a deep groove in the gum, reaching from the right angle to the second left molar, alone remaining to show the former seat of such extensive disease.—*London Med. Times and Gazette.*

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## EFFECTS AND TREATMENT OF SALIVARY AND MUCUS DEPOSITS.

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BY LOUIS AUGSPATH, D. D. S.

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There is, doubtless, in the whole range of causes nothing which exerts a greater influence upon the profession of dentistry than the neglect, on the part of the mass of mankind, of proper care of the teeth and mouth.

A want of care is beyond all question, the source of most of the diseases and evils to which the teeth are subject. There is, probably, nothing which more properly claims the attention of the intelligent dentist than the subject of deposits, including the calcareous formation usually denominated *Tartar, and the Green and Brown Stains*, and all those impurities on the teeth which are produced by neglect, tobacco and other similar causes.

It is well understood that there are different varieties of tartar, characterized by color, composition and consistency, but all produced by the same cause and resulting as a precipitate of the saliva, in connection, possibly, with deposits of the mucus.

Persons of all ages are subject to deposits of tartar, although it seldom appears before children have erupted their six year molars, but continues to be formed throughout life ; and often to such a degree, that teeth may be found nearly if not entirely covered with it, especially in persons who have been repeatedly and severely salivated, or are of a dyspeptic or scrofulous diathesis. In some persons tartar is deposited throughout life, while others are exempt until some con-

stitutional change takes place when it is rapidly eliminated. This deposit in its direct action on the tooth, in regard to health, is innocent, as it is an exterior formation on the surface of the tooth, and serves rather to prevent than to produce decay. On the other hand it is well worth the notice of the dentist and should never be allowed to remain, as from its tendency to increase on the most protected points, it will naturally force the gum to recede, the alveolar process to absorb (where there is pressure there is absorption), and if left unmolested will not only loosen the teeth but finally cause them to drop from their sockets.

Green and brown stains, doubtless, are caused exclusively by the mucus. This stain is not, like tartar, a formation on the tooth, but enters into the composition of the enamel and tends to produce decay and the destruction of the entire tooth. To this disorder young persons are especially liable, as the enamel is of a lower order of density and the acids of the mouth will therefore act upon it with greater rapidity than in more advanced age.

As a general rule the anterior superior incisors are most liable to be attacked by this disease, owing to their position in the dental arch, where the saliva is only sparingly retained, and where the cleansing if not polishing action of the tongue is almost entirely excluded. This will to some extent account for the reason this disease selects the labial surface in preference to any other.

The remedy for the former of these diseases (tartar) is purely mechanical, but for the latter (stain) it may be necessary to combine the mechanical with therapeutic treatment.

Giving attention first to tartar, I shall endeavor to explain the *modus operandi* in relieving the teeth of these disagreeable and destructive affections. There are two methods of removing salivary calculus from the teeth: the one by chemically decomposing the deposit by the use of some acid, the other, mechanical, by scaling and scraping with appropriate instruments. The former should never be resorted to, as the chemical action of the acid does not stop with the decomposition of the calcareous deposit, but by the same affinity attacks the tooth itself, and with almost equal readiness destroys it. The removal of tartar by the second method does not involve a very great amount of skill, and with suitable instruments is easily performed. To accomplish the operation with success, appliances and instruments of various forms and curves are necessary, adapted and adjusted to the various situations to be operated on. All instru-

ments should be very sharp ; but, in my opinion, with the cutting edge slightly removed. The blade of the instrument should be applied at a slight obtuse angle with the tooth, beyond the edge of the deposit next to the gum, and passing under the tartar thus scale it off to the point of the tooth, in such a manner as not to roughen or in any manner abrade the enamel. Tartar which is deposited on proximal surfaces of the teeth is to be carefully noticed and removed with instruments having very thin blades. After the thick deposits have been removed the surface should then be carefully and gently scraped, so as to thoroughly clean off every particle of the tartar, and afterwards fully and completely polished with fine pumice or Arkansas stone, and finished by burnishing. The manipulation of removing tartar is one of the most simple in dental practice, but to be successful in this, as in every other operation, the process should in every instance be performed with the most perfect thoroughness, as neglect or carelessness on the part of the operator will cause a new deposit on a rough surface with great rapidity. In fact a careless operation will often leave the mouth in a worse condition than before the teeth were operated on.

The removal of salivary calculus is perhaps the most unpleasant duty the dentist is called upon to perform, as the majority of the cases which require it are very disagreeable, and many are positively disgusting. The popular mind seems to be lamentably ignorant on the subject of proper care of the teeth ; and it should ever be the duty of the dentist to inform his patients of the importance of cleanliness, as many are very prone to neglect the matter, either on account of the unpleasantness of the operation, or from ignorance of the necessity of it.

The eradication of *Green or Brown Stains* requires some practice—judgment, and a more skilful manipulation than the removal of salivary deposits. As this disease presents itself in three distinct stages I shall speak of the remedies suitable to each one.

STAGE I. Where the erosion is but slight, friction with a piece of hard and fine grained wood (such as orange wood) combined with fine pulverized pumice stone, will be found sufficient to correct this evil. The principal seat of the stain being on the neck of the tooth and in close approximation with the free margin of the gum, care should, in every instance, be taken not to wound the soft tissue, such accident, although of no material consequences will have great influence upon the patient. In most cases the operation will ever

afterwards be dreaded, and most certainly will they complain of the roughness or the unskillfulness of the operator.

STAGE II. The disease having made great progress we will not only find the enamel discolored to a greater extent, but will also find that the disease has carried its ravages to a great depth. In most cases the dentine will be more or less involved; this being the case the tooth, as a general rule, is extremely sensitive to the touch. The disease presenting itself as above described, the enamel chisel and file will be the most appropriate instruments to perform the operation. The chisel, the first instrument brought into service, should be of fine quality, of excellent temper, decided sharpness and well adapted to the surface to be operated on. And here I wish to remark, that all of the above qualities are combined in the instruments known as Dr. B. F. Arrington's enamel chisels. These instruments may be approximated but not surpassed.

Grasping the chisel firmly, and in such a manner as to leave the thumb independent of the movements of the hand, this (the thumb) should rest on a neighboring tooth, in order that the operator may have perfect control over his instrument and avoid the slipping of the same, by which accident the soft tissue would be wounded. This precaution observed, the operator will proceed with a steady and decided movement of his hand, cutting from the edge of the tooth towards the gum, and thus separate the diseased from the healthy tissue.

In all cases the operation will be painful, but in many intolerable; for such, the writer has applied nit. argent (chrysalized) by slightly touching the sensitive dentine, and with the most happy results.

The chisel following each application of the caustic, the diseased tissue will be removed without much inconvenience to the patient, and before the caustic has time to discolor the dentine.

As a precaution against discoloration, it is advisable to apply a neutralizing agent, such as common salt.

By using the chisel carefully the use of file may be omitted, and I prefer to dispense with this latter instrument as the friction produced by it gives unnecessary pain, and does not aid any in the speedy accomplishment of the operation. Having thoroughly removed the diseased tissue the surface is now ready for final finishing, the process being the same as already described in the removal of salivary deposit. Of course, the above treatment is only advisable where the

dentine is well clarified and of sufficient thickness to protect the pulp.

STAGE III. In this stage of the disease, the dissolution of the dentine will be in very close approximation with the pulp, and in many instances this organ will be found exposed. The treatment applied in the second stage is here not admissible, and should therefore not be attempted, as it would remove too much of the healthy tissue to leave sufficient protection for the vital part, saying nothing of the disfigurement and the weak condition in which the tooth would be left. Under these circumstances our only treatment is to form a cavity of proper shape and fill accordingly.

In the treatment of the teeth, as with all other diseases physical or moral, there is much truth in the old maxim—"an ounce of prevention is better than a pound of cure." The most potent of all preventives of disease of the teeth and mouth is cleanliness. Therefore, the dentist should avail himself of every opportunity, and neglect no means of impressing upon the minds of his patients their duty in this respect.

Local treatment will many times prove insufficient, even in cases which are not complicated with constitutional diseases, as syphilis, scrofula and the like, therefore every dentist should qualify himself to administer this treatment in his own person, rather than refer his patient to the practitioner of medicine.

This is an imperative duty if we would uphold and support the true dignity of our profession, and demonstrate to the world the validity of our claim to be considered members of an alleviating and healing profession.—*Ameritan Journal of Dental Science*.

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#### DISEASE OF THE ANTRUM.

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J. H. M., of Surry Co., North Carolina, sent us a few weeks ago, the following history of his own case :

"In 1859. I experienced severe toothache in the left superior 1st bicuspid, followed by swelling. In about a month suppuration occurred, and the pus was discharged through the left nostril, and has continued to run, with short intermission until the present time.

I have no acute pain, but there appears to be a fullness and a dull aching on the side of the left nostril, which appears to be the seat of the disease, most of the time. In the morning the matter appears to

run into my throat and mouth and smells very offensive ; in fact this is the case all the time.

My general health is not good ; I am very nervous, with constant weakness in the back ; although my appetite is good, I am considerably emaciated, yet able to do light work in good weather.

In 1864 a Dentist extracted all the teeth on the affected side back of the eye-tooth, and punctured the antrum from the socket of the first molar without any beneficial effect. The soreness is mostly above the eye tooth, which tooth has always been somewhat sore, so much so as to lead me to suspect it is diseased about the end of the root.

I have been treated by physicians with iodine, &c., without effect. They say I have neuralgia also, but think it originates mostly from the antrum."

We advised, in the first place, the removal of the affected cuspid tooth, believing it necessary to get rid of all irritants, and to determine, by probing, whether an opening existed from the cavity of this tooth into the antrum. If no such communication was discovered, then to perforate the bone above the point formerly occupied by the palatine root of the first molar on the affected side, and use as injections, either Lugol's solution, or the permanganate of potash ; to inhale iodine once or twice a day, and paint affected side of nostril and part of face with tincture of iodine ; internally to use iodide of iron, iodide of potassa, and cod liver oil, taking this prescription three times a day ; also to use bitter tonic tincture of gentian half an hour before each meal.—*American Journal of Dental Science.*

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#### ACUTE RANULA.

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At a recent meeting of the Societe de Chirurgie, M. Bouchard related a case of "acute ranula." A woman eight months advanced in pregnancy, while swallowing a glass of wine, felt a tumor suddenly form in her mouth, which in a few minutes had acquired a size sufficient to obstruct the passage of air and threaten asphyxia. He found her in that condition, having both sides of the supra-hyoidean region greatly distended, and with a tumor the size of a large fowl's egg, thrusting back the tongue, and filling the cavity of the mouth, excepting a small space on the left side. The tumor was livid and fluctuating, and seemed to be caused by effusion under the mucus membrane. On making an opening into it with scissors, the dis-

charge of a considerable quantity of white-of-egg fluid showed that the tumor really was an example of acute ranula.—*Philadelphia University Journal of Medicine.*

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### PRESERVATION OF THE TEETH.

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BY H. NICHOLS WADSWORTH, D. D. S., WASHINGTON, D. C.

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ONLY the prostration resulting from an attack of nervous fever prevented me, some months since, from avowing my firm belief in the soundness and enlightened views advanced by Dr. Robert Arthur, for a more perfect and successful preservation of the teeth entrusted to us by the confiding public, through a more general *anticipation and prevention* of disease, where our experience has convinced us it must inevitably follow. The propositions advanced by Dr. Arthur, in their general character, are, in my opinion, sound and uncontrollable; they are calculated, when acted upon by discriminating, honest, and skillful practitioners, to *greatly* increase the per cent. of successful practice; to decrease the expense to our patrons; and, what in my mind is a far greater pleasure than either, afford the satisfaction to our own hearts which is engendered by success.

Twenty odd years of zealous, hearty labor in my profession, with a critical observation of the results of other practitioners of known and acknowledged skill, has demonstrated; beyond controverting, the large number of failures in a few years after performance of approximal fillings. The honest, conscientious in our profession will, I think, acknowledge its truth. If, then, this be true, is it not better for us to adopt some method by which we can decrease the number of unsuccessful operations, and increase those that are successful?

Please to remember, I am not urging this method of practice upon the student and tyro in our profession, but upon the skillful and experienced practitioner,—upon him who knows *when, where, and how* to extract, to separate, and to stop or fill.

Where is the practitioner of ten years' standing that can deny the assertion that, on an average, three out of four of all his patients have lost more or less of their bicuspid teeth—probably four of them? If this is a true average, why should we not then sacrifice four of these teeth early in life, when by doing so we obtain room for an expansion of all the other teeth, in a great measure relieving the crowded condition occasioned by the eruption of the second molars (second dentition), and which is greatly increased by the eruption of

the third molars or dens sapientiæ? If this does not suffice, but evidences of decay begin to show themselves on the approximal surfaces, then the judicious, careful application of Dr. Arthur's suggestions are wise and prudent, and the day I believe is not distant when the profession, rising above prejudice and self-interest, will acknowledge the efficacy of such a course of operating; present it to their patients, explain its utility, and firmly and respectfully urge its adoption.

I am well aware what a handle is given the unscrupulous operator in advancing these sentiments. I am well aware of the prejudice existing in the minds of a large class of our patients against the use of the file (as they all understand a separation); but, my impression is, that he who has honestly and skillfully practiced our profession for a number of years, must have obtained a sufficient control over his patients to be able easily to convince them that his advice is for their permanent good, and gain their consent to submit to his experience and skill.

A case came under my observation several years ago bearing upon this point of separating the teeth, which I will relate:

A gentleman for whom I was operating asked my opinion of his front teeth. My answer was, "They have been pretty severely filed." "Yes," he replied, "and I did it myself. Twenty-two years ago my front teeth were very badly decayed. I went to one of the most celebrated dentists in Philadelphia to have them filled. To my horror and disgust, he said, 'They are too far gone to fill and save. I would advise you to let them alone, and when they commence paining have them extracted and artificial ones substituted.' I went down into Market Street, and purchasing a broad, flat file, I went home, placed myself in front of a glass, and, though it hurt almost beyond expression or bearing, filed a broad space between each of my front teeth.

The spaces were enormous, but every tooth was in its place, and likely to remain; the decayed portions yet remained by slight cavities, and others by discolored but not entirely decomposed bone.

Who among us cannot look over the mouths of many of his patients and find many, many elegant teeth that have been saved, and still presenting the beautiful polished surface of a separation and erasure, and that done years ago?

The utmost *skill* and *judgment* are demanded in adopting this mode of operating. The countenance of the *best*, the *wisest*, the most

honest in our profession is necessary to bring it into general practice, for I can anticipate, and have already seen in our own local society with what opposition it will be met ; yet,—

“Truth, crushed to earth, shall rise again ;  
The eternal years of God are hers ;  
But Error, wounded, writhes in pain,  
And dies among its worshippers !”

I am proud to announce myself as having long held nearly the same opinion with Dr. Arthur, as to the propriety of adopting more of a preventive system in our operations ; and I have taken the first opportunity in my power to express myself in its favor, and to assist him in his conscientious and honest efforts to advance our profession in science and usefulness.—*Dental Cosmos*.

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## E D I T O R I A L.

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### MEETING OF THE ONTARIO DENTAL SOCIETY AND THE ELECTION OF A NEW BOARD OF EXAMINERS.

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It will be remembered by all those who were present at the meeting of the Ontario Society in Belleville, last July, that the Society adjourned, to meet again on the day appointed by Law for the election of a new Board. At that time, a proposition had been made to ask Parliament to amend the “ Act ” in several respects, and particularly, in regard to the *time* for the election of a new Board, and for the regular sittings of the Board, but for reasons not necessary to be mentioned now, it was afterwards decided *not* to make application till after the next election, which will therefore be held on Tuesday the 7th of June, the day originally fixed by the Act. The Dental Society will meet on the same day at 2 p. m., so as to give the members an opportunity to discuss any and all matters pertaining to the interests of the Profession before the hour fixed for the election of the Board, which will take place at 7 p. m. We hope to see every Licentiate in the Province present, both at the meeting of the Society and at the election. We hope they will come prepared to take an active part in the discussions of the Society—to give out as well as receive of the good things which the committee have prepared for our entertainment.

The following gentlemen were appointed Essayists for this meeting, viz. :—D. A. Bogart, subject, “ Cleft Palate ;” H. H. Nellis

D. D. S., subject, "Dental Hygiene;" C. P. Lennox, subject, "Literary attainments of Dental Students;" J. B. Willmott, subject, "Notes from some experiments in vulcanizing rubber;" John Leggo, subject, not announced, from which it will be seen that the meeting will be an interesting one. We hope too, that all will come prepared to vote for the *best* men for the new Board, irrespective of parties or cliques. Let it be remembered that the Society meets on Tuesday 7th of June and that the election of the new Board will take place at 7 o'clock p. m., on the same day. The Secretary, Mr. J. B. Willmot of Milton, will send circulars, to all, stating at what place in Toronto the meeting of the Society will be held. C. S. C.

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FINED.—We have received the following from Mr. T. J. Jones taken from one of the Bowmanville papers :

"A WARNING.—As a warning to persons violating the law respecting Dentistry, a young man by the name of Thomas was on Tuesday last brought before F. Cubitt and J. Milne, Esquires, Justices of the Peace, and fined for practising dentistry in Orono and vicinity, without having a license so to do. According to the Act, no person is allowed to do business as a Dentist who has not passed an examination before the Dental College Board, and received a Diploma."

Mr. Jones writes that he is determined to prosecute every man calling himself a Dentist, who attempts to practice in his vicinity without a license.

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A DUN'S REVENGE.—The Vienna correspondent of the *Daily Telegraph* tells the following story :—"A few months ago one of the first dentists supplied Madame de B, a lady well known in our fashionable circles of the *haute* finance, with a splendid set of false teeth, worth about forty pounds, and waited with exceeding patience for payment. Finding that the lady 'made no sign,' he applied, after three months had elapsed from the date of delivery, by letter, for the discharge of his claim. No answer. A fortnight later he wrote again, in somewhat stronger language, but received as little notice of his second as of his first application. Determined to have his money, and to be even with Madame de B. for her discourtesy, he last week inserted in a small suburban paper the following advertisement :—"A magnificent set of self-adjusting enamelled teeth to be sold dirt cheap. They are daily on view in the mouth of Madame de B. (full name), Stadt, So and So street, No. —." Then he cut out the slip, and enclosed it in an envelope to the fair defaulter. Two hours after his bill was paid, and Madame de B., hoped, as the paper in which the advertisement appeared was an insignificant one, that she had heard the last of her bargain; but alas! to-day the leading journals of Vienna have got hold of the story; and if I were the toothless *lionne* whose name is in everybody's mouth, I think I would leave the Kaiserstadt for a season. No teeth have made such a sensation since Cadmus' famous crop."

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ORIGINAL COMMUNICATIONS.

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EDITORIAL NOTES ON PRACTICAL SUBJECTS.

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SEPARATING TEETH PREPARATORY TO FILLING.

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BY C. S. CHITTENDEN.

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As it is admitted, on all hands, that it is necessary to have room enough to work in before we attempt to fill proximate cavities, the thing to be considered is, what is the best method of obtaining this room, or rather in what manner can the teeth best be separated.

Many substances have been employed for this purpose, from time to time. Twenty years ago wooden wedges were used almost exclusively, but as they were not easily retained in position they were abandoned, to be succeeded by bits of India rubber. These, by being stretched out till they formed only small threads, could be passed between the teeth, and by contracting would force the teeth apart. But as the rubber "didn't know enough to stop contracting when it had separated the teeth sufficiently," it gradually went out of use, to be superseded by other substances. Latterly, what is called "forcible separation" seems to be taking the place of all other methods. The teeth are forced apart by driving a wedge, made of some firm, solid wood, between them, as near the cutting surfaces as it can be done, and then driving another wedge at the necks of the teeth. The former produces the separation, and the latter retains it after the first has been withdrawn. By this process the operator is enabled to fill at once; but, after having tried it on a large number of patients, I have found the pain so intense, that I have abandoned

it except in cases where it is absolutely necessary that the filling should be done at the time.

I have for some months past used cotton almost entirely for this purpose, commencing with a small pledget which I allow to remain for a day or two, when I put in a larger one dipped in sandarach. By this means I can spread the teeth as far apart as I wish, with very little pain. A tiny pledget between the teeth gives but little more uneasiness than the particles of food which often remain after eating, but it acts most powerfully, and will start apart the most firmly fixed teeth, and do it so gently that the patient is hardly aware they are being moved at all.

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### NECROSIS OF A PART OF THE SUPERIOR MAXILLARY BONE.

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BY CHAS. P. LENNOX, L.D.S.,

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A little girl eight years of age was brought to my office, about the 15th of November last, for the purpose of having an ulcerated tooth extracted. Upon examination I found the second superior molar of first dentition on the right side carious, and extracted it without making further investigation. A week passed, and the patient again called to have the first permanent molar extracted, it being loose and ulcerated. I found the crown healthy, but the tooth much diseased at the roots, and pus being discharged from the gum. Being busy at the time, I extracted the tooth with the intention of making an examination at some future time. I found upon examination of the tooth, what I supposed to be a genuine case of spina ventosa, and sent it to Mr. Callender as a contribution to the museum.

Having called upon the patient, I made an examination of the part, which I found to be in an advanced stage of necrosis. I operated immediately, removing all the sequestra I could find, bringing away the germ of the second permanent molar, the floor of the antrum of Highmore, and the alveolar process from the tubercle to the region of the second bicuspid. At a subsequent operation, I removed a large sequestrum, bringing away the germ of the second bicuspid, and a part of the outer wall of the antrum; leaving bare the root of first bicuspid to its apex, which had erupted prior to the commencement of the disease, which I feared would ultimately come away, it being very loose. I could now freely pass an instrument to the floor of the orbit through the opening made in the mouth.

I questioned the father at the time of the first operation, but could not determine the cause. At the time of the second operation, I had an opportunity of seeing the mother of the patient, and having suspected disease of the antrum, questioned her in that particular; when I ascertained that for four months she had been suffering from diseased antrum, originating from a cold. The natural opening of the cavity being closed, engorgement ensued, distending the walls, forcing its way through the floor of the orbit, and was lanced at the edge of the orbital cavity. A physician was consulted several times during the process of the disease, and finally put his lancet into the tumor with no further treatment. The wound made by the lancet was healed when I saw her, and the natural opening of the antrum restored; but the inflammation of the lining membrane, consequent upon the long continuation of the disease, was productive of the necrosis of the bone.

My treatment of the case was as follows. The patient was a very healthy child, free from any scrofulous taint, but very weak from the long continuation of the disease. Having removed the necrosed bone, I injected a solution of nitrate of silver first; ordered

Tinc. Mur. Iron, dr.  $1\frac{1}{2}$   
Sulp. Quinine, gr. 16,  
Water, oz. 4,

to be taken in teaspoonful doses three times a day, and daily injections of solutions of myrrh, tinc. of iodine, and occasionally a drop of carbolic acid. I ordered a nutritious diet, and I now have the pleasure of seeing the patient well, with no defect save the loss of the second bicuspid, first and second molars, and a small opening to the antrum which I think will eventually close.

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## PRESERVATION AND FILLING OF TEETH.

W. R. PATTON, D.D.S., QUEBEC.

*Read before the Quebec Dental Society.*

MR. PRESIDENT AND GENTLEMEN :

The honor you have conferred on me as an essayist of this meeting, I can assure you is somewhat gratifying, and therefore the few remarks I have to make on the "Preservation and Filling of Teeth" will, I hope, meet with your approval; the only apology in connection therewith being that, not having the advantages of an unlimit-

ed experience, like some of my respected confreres of the Society, they will kindly excuse any plagiarism or defects of style in the following :

As the preservation of the teeth depend on the manner of their *personal* treatment by the patient, and their treatment pathologically by the dentist, I will first allude to decay and causes of decay, and conclude by stating the means resorted to for the eradication of disease, under the heads of cleanliness, and filling of teeth.

Caries or decay of the teeth in every instance commences externally, and remedies externally applied will ever arrest and prevent it ; and though disease originates in this manner, it does not attack the entire surface of a tooth, but merely *certain* points common to the same class of teeth in all mankind, where from some peculiarity, accidental or of shape, morbid action necessarily commences. So do we frequently find decay attacking the teeth in *pairs*, on account of shape and the circumstances in which they are placed at every stage of their existence being similar ; what I mean by pairs are the organs corresponding to each other on either side of the arch, at the same time I may properly say that they decay in *double pairs*, the same rule being applicable to the corresponding teeth of the lower jaw.

The saliva in its purity is incapable of injuring the substance of teeth, especially the enamel, and thus we inevitably find the most prominent portions of an organ the most perfect ; even the dentine when left unprotected, by filing, having the enamel broken off or worn down by mastication, if in a situation where it can be kept cleansed, resists decomposition for years, though very much less calculated to do so than enamel. From this we must conclude that the saliva, in itself harmless, when in combination with substances introduced into the mouth, different kinds of food, etc., and allowed to rest there, becomes stagnant ; its properties change, and by a chemical agency on the relics of food lodged on, in or between the teeth, a deleterious change takes place, resulting in the formation of an active acid, which by reiterated contact with the organs, exerts a pernicious influence, attacking and destroying the tooth structure. Therefore the advantages of cleanliness, which in connection with the mouth means literally the free use of tooth-brush and water, for we can easily understand how by their aid the alimentary particles so snugly hid away in the indentations and crevices of the teeth after meals, can be thoroughly washed out of their otherwise strong and evil positions. This is the personal treatment I have alluded to, and

which should be the more particularly attended to, as decay, in many instances, originates *notwithstanding* the utmost attention to cleanliness; this can be easily accounted for from the shape of teeth, their pressure laterally against one another, and irregularity, which I regard as primary causes of decay.

Though the use of the brush will ever protract incipient decay, I am of opinion that once the enamel is decomposed and the dentine reached, no amount of cleanliness will arrest it until the patient comes under the hands of the dental surgeon; for though the dentine be affected through the *minutest* cavity in the enamel, the resistance of the latter being greater than the former, the decay of dentine spreads laterally beneath the shell of enamel, and none of the ordinary means resorted to for cleanliness can stay its progress; the saliva ever finding the entrance no matter how minute, and acting in a similar manner in connection with the disorganized dentine as it did with the alimentary deposits, the substance of the tooth becoming a devourer in its turn of its more healthy remains. Arrived at this stage the time required for the total destruction of a tooth depends on its constitutional character, for some teeth will decay as much in a month as others during a year.

At this point in the decay of teeth, when ordinary means have failed, the unfailing pathological means of treatment, the specialty of the dental surgeon is or at least should be resorted to. As with scaler he removes all salivary deposits, and by aid of excavating hatchets and hoes, he, like a careful husbandman who lops off the decaying branches of his valuable trees, covering the wound made by the knife with some substance to exclude air and moisture; so he cuts from every organ the decay attacking it, replacing by some dental material (of which I shall speak further on) which shall effectually exclude air and moisture from the healthy remains, and moreover resist the effects of the corroding acids. That this manner of treatment is an efficient means of prevention we have ample proof, for teeth that have been filled in this way are known to last in their imperfect state for years, while others more perfect, but left to their fate had long before been reduced to corroding fang merely.

I have stated that shape, lateral pressure, and irregularity of teeth were primary causes of decay, and will proceed to give reasons for such a conclusion. Bicuspid and molars are the teeth most affected from this cause. Incisors commence to ossify from one point, bicuspid from two, and molars from four, the latter presenting much the

appearance of several incisors tied in a bunch. As the process comes to a finale, various grooves, fissures, and indentations result from the union of the points of ossification, severally named crown fissures transverse and lateral, and fissures lingual and buccal; these being more or less deep in accordance with the peculiar shape of teeth. And here we might notice a fact that has been observed, viz.:—that a molar whose cusps centre towards each other, have, as a rule, the fangs widely diverging, rendering extraction difficult; but when the cusps diverge the fangs are correspondingly close, thereby tending to render the operation of much more facility. To return; incipient decay makes its appearance by gradually darkening specks, and wherever these symptoms are perceived, you will inevitably find that it has chosen, or rather fallen on one of the natural fissures or indentations in the surface of the teeth caused by their shape, as the starting point for its ravages. This decay is very deceitful, especially when situated in crown fissures of molars; the patient being generally ignorant of the ruin taking place, until suddenly made aware of it by the enamel giving way from loss of foundation. The incisors sometimes decay from this cause, but 'tis very seldom, and when so, the lingual surfaces are found to be the point of weakness, the enamel forming there a deep corrugated pit well adapted for the retention of corroding substances; but, as a general rule, it may be considered that the grinding surfaces of molars and bicuspidis are the unfortunate victims of this cause of decay, and those of the maxillary upper much more subject than the teeth of the lower. Observe the teeth attentively for a moment, and what is stated cannot but be remarked; for wherever there is a natural hollow in the organs, there will be a dark line pointing out, as it were providentially, the defect leading to decay which should be remedied. It is also worthy of remark, that persons whose teeth from natural shape are not liable to decay, have the grinding surfaces more even and unbroken, thereby being less capable of retaining moisture, etc., although the process of original construction can be distinctly traced in every instance. However it is gratifying to know that this species of decay is the most easily noticed, and the skillful dentist perceiving at a glance the affected portion at its earliest stages, and remedying it immediately; the subsequent pathology being *great cleanliness and periodical inspections*.

That teeth decay from "lateral pressure" is evident to every careful observer, for we know, undeniably, that teeth in close contact decay

sooner than those between which there is space, and it would be difficult to instance a case of "proximal decay" where the teeth do not press severely one against the other. Teeth have sometimes from the size of the maxillary an insufficiency of space, the lateral pressure is consequently increased and becomes injurious, serving to crack the flinty enamel by diminishing the supply of nutritive material to that portion of the tooth, but principally by forming a space or nook for the irremediable lodgement of impurities, as in the case of indentations in the molars, as formerly alluded to. That we can deduce this conclusion, may be proved by the fact that, *crowded teeth* will decay in spite, as it were, of every means of cleanliness, and also that in cases where they are so much crowded as to have some of their members pushed out of the arch, presenting the appearance of supernumerary teeth, these outcasts are very seldom found decayed. All the teeth are liable to decay from this cause, though not in the same degree; the molars and bicuspid being victims as much to this cause as to that of shape, for being of a square compact build, they cannot slip to one side or the other, as in the case of the incisors, whose alveolar processes are more yielding, the latter thus escaping to a great extent from the too affectioate contact of their neighbours. This decay is found very frequently in the incisors of the superior maxillary, forming a cavity well known among the profession as the proximal (or near to), and wherever a cavity of this kind is discovered in an organ, the one in contact will indubitably be found suffering from the same cause. It makes its appearance in the form of a darkening speck at the point where two teeth are in close contact, hence an idea that the decay of one affects the other. This may literally be true, but I am of the opinion that the two organs being situated under similar circumstances are affected at one and the same time, and in the same manner; the speck gradually enlarges, the enamel decomposes from the effect of the impure matter constantly lodged there, and the dentine once reached, if not arrested by dental means, the organ soon disappears by the undermining process, generally preserving its outward appearance to near the last, when by coming in contact with food of a hard nature it, to use a once popular phrase, "can't stand the pressure," and therefore gives way. Nothing can be more deceitful than this species of decay, even more so than that of shape. I have often passed over teeth on an examination, which on closer inspection have turned out to be the most decayed in the arch, and I have no doubt 'tis from this species

resulted the exploded idea of "internal decay." It may be here remarked that decay from lateral pressure is frequently caused by mismanagement, and this observation can be more particularly applied to that class of society for whom too much rather than too little has been attempted by the dental surgeon. As irregularities of the teeth lead to this decay, they in turn being caused by the too premature extraction of the temporary organs of childhood, and are consequently more met with in high life than in low. It is equally common to strong teeth and to weak, to those of persons who enjoy the best of health and those who do not, and if they were capable of being kept *perfectly* clean, I have no doubt but disease would be imperceptible from this cause; fortunately it can be remedied as formerly stated, if brought into our hands when necessity or rather prudence compels the sufferer to apply to our ranks for relief. Decay from irregularity of the teeth can be accounted for from the same causes as heretofore alluded to in lateral pressure, the teeth from want of space being pushed into abnormal positions tending to form the works of destruction already pointed out. I find from the length of this article, I will be obliged to curtail as much as possible the remarks to be made on cleanliness and filling; but before coming to this part of my subject, I would state that the shedding or temporary teeth decay from the causes stated as much if not more than even the permanent, as less care is devoted to the organs in childhood than in adult life.

The great preventive means of decay is *cleanliness* on the part of the patient, who should make use of some powder in common with the brush, which should be resorted to after every meal. Many persons use the brush vigorously but fruitlessly, and it will generally be found in such cases that it is merely passed round the arch across the teeth, consequently the fibres are thus pressed down against the organs, passing over the exact spots most needed to be cleansed, whereas if an up and down movement was brought into action the fibres would necessarily pass *between* the teeth, clearing out everything foreign that may have settled there. Again, the large majority of persons labor under the idea that it is merely to the anterior surfaces of the teeth it should be applied; and they therefore devote much time to the fore part of the mouth, leaving the interior and rear portions to look after themselves, and be satisfied in lieu with the motions of the tongue. As a result of this very unreasonable treatment. the most useful organs of mastication are sacrificed. The brush should be used thoroughly, be manipulated in all directions,

inside and outside, back and front, laterally and in every way in which it is capable of being handled, so that every tooth be brushed, and thereby derive benefit from the use. Tooth-picks have often been abused unjustly; in my opinion they should ever be made use of, always choosing for such an object an article of a soft nature, such as the German wooden tooth-pick, or the quill; for the purpose the latter cannot be surpassed, as it is softened by the fluids of the mouth and can be inserted in every crevice without detriment, pain, or injury to the organ or the surrounding tissue. Floss-silk should also be resorted to as a means of cleanliness, for it can be readily passed anywhere between the teeth where the brush or tooth-pick would fail, and so dislodge everything injurious. These observations may seem unimportant, notwithstanding their simplicity they should be attended to and given as advice in office practice, for it is remarkable what ignorance prevails even among the higher classes in connection with this subject. Should the above simple hygiene be daily put into general practice, I have no doubt but it would effectually arrest to a great extent the dental decay which leads to so much deformity and suffering.

## PROCEEDINGS OF SOCIETIES.

### QUEBEC DENTAL SOCIETY.

A regular meeting of the above Society was held at Dr. Bernard's office, on the 2nd of May.

Present—Messrs. Bernard, Venner, Valois, Leblanc, Mathieu, Courtier, Patton, Young, Bazin, Trestler, Sen., Trestler, Jr., Baldwin, and McKee.

Dr. Bernard in the chair.

The name of the Society was changed from "Dental Association of the Province of Quebec," to "Quebec Dental Society."

An essay on the "Preservation and Filling of Teeth," was read by Dr. W. R. Patton, of Quebec, and a vote of thanks tendered to him. An interesting discussion followed.

After the meeting the members adjourned to an entertainment at the "Carleton Rooms," provided by the Montrealers, as a slight welcome to the confreres from Quebec, &c. Mr. A. Ogilvie, M.P.P., Alex. M. Stevenson Esq., and Mr. A. Booker were present by invitation—Mr. Cartier being unable to attend.

## QUEBEC DENTAL BOARD OF EXAMINERS.

BY W. GEO. BEERS, SECRETARY.

Montreal, Monday, May 2nd, 1870.

The regular meeting of the above corporation, in accordance with the Act of Incorporation, was held to-day at the office of W. G. Beers, Montreal. The following members were present:—A. Bernard, C. F. F. Trestler, J. McKee, J. H. Webster, C. Brewster, J. A. Bazin, M. Pourtier, E. Lefaivre and W. G. Beers.

The minutes of the former meeting were read and confirmed. The President explained the amendments made to the Act, and the following resolution was passed, "That the action of the officers in procuring amendments to the Act be approved, and that the expenses incurred be paid."

The following applications for license with examination, were read, A. Knowlton, of Knowlton; J. C. Nichols, Montreal; C. H. Wells, of Sweetsburgh; C. H. Stewart, of Montreal.

The three former were received for examination. The application of Mr. Stewart was unanimously rejected, on the grounds of bad moral character, and having applied for examination under an assumed name; his real name being C. Sill. Letters and a photograph of the applicant were produced from the police office identifying him as a dentist who had run away with a woman named Kate Fry, from the United States, leaving a wife and several destitute children. The applicant had admitted having left his wife and children.

The honorary degree of L. D. S., for Province of Quebec was conferred upon Messrs. B. W. Day and J. O'Donnell, President and Secretary of the Royal College of Dental Surgeons of Ontario; and upon C. S. Chittenden, President of the Ontario Dental Society.

Mr. Ed. Carter, Montreal, was appointed to prosecute all parties practicing dentistry in this Province without license.

The examiners were arranged as follows: Anatomy, C. F. F. Trestler; Physiology, W. G. Beers; Chemistry, C. Brewster; Surgery, J. McKee; Pathology, W. G. Beers; Filling Teeth, J. A. Bazin; Mechanical Dentistry, J. H. Webster; Anæsthetics, E. Lefaivre; Irregularities and Anomalies, J. A. Bazin; Hygiene, M. Pourtier.

The candidates were examined in succession, orally and in writing. Tuesday, May 3.

The adjourned meeting was held this morning. J. McKee in the chair. Present—J. McKee, M. Pourtier, C. Brewster, J. A. Bazin, J. H. Webster, E. Lefaivre, W. G. Beers.

The application of Mr. Baldwin (St. Andrews) for Licentiate without examination was granted.

Messrs. Knowlton, Nicholls and Wells were presented with their certificate of license by the chairman, and the meeting adjourned.

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#### MICHIGAN DENTAL ASSOCIATION.

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THE fifteenth annual meeting of the Michigan Dental Association convened pursuant to adjournment, Tuesday Oct. 12, 1869, at Detroit, Mich.

The President being absent, Dr. Holmes, of Grand Rapids, was called to the chair.

The question of "Sensitive Dentine" was taken up for consideration.

Dr. Corbin said: If the cavities were numerous, and the patient sensitive, he generally found cotton saturated with creasote quite effective; if choroform was used, a coating of gum mastic with cotton would protect the dentine from the action of the saliva, as well as prevent evaporation, for weeks. Chloride of zinc was more prompt, but painful.

Dr. Douglass said that he had been accustomed recently to diet his patients who were subject to sensitive dentine, and found the results very satisfactory; in connection with this treatment he uses carbonate of lime. In dieting he uses Graham bread, taking little or no drink at meals, tea without milk or sugar, and no sugar except in food; to drink nothing until meals have digested, and then to drink three or four times of water before the next meal.

Dr. Thomas preferred chloride of zinc though the latter must be used with care; arsenic with creasote is sometimes used, but it destroys the pulp, and should therefore be abandoned. He thought also that a sharp excavator was the best instrument for dealing with dentine, though remedies for deadening the pain may be employed, but is somewhat dangerous unless the greatest care is used.

Dr. Field has used the various remedies except arsenic. He greatly favored the free use of the excavator, and is strongly favorable to the use of creasote.

Dr. J. H. Warner said there was nothing like sharp instruments; he liked carbolic acid, for, if the cavity could be reached, he believed there was something in it that operated well. Arsenious paste, chloride of zinc, etc., were all right if removed at exactly the right

time. A bold hand was needed to do the cutting, yet, without constitutional treatment, all remedies might be unsuccessful.

Dr. Corbin regarded sharp instruments as a foregone conclusion. He believed the fibrillæ in the dentine analogous to nervous matter.

#### AFTERNOON SESSION.

Dr. Crooks deprecated the practice of using arsenious acid as most dangerous to the teeth ; the use of chloride of zinc he favors, and uses extensively in his practice, with favorable results.

The next subject was " Alveolar Abscess."

Dr. Thomas contended that after the abscess had once formed it was impossible to save the tooth. He held that abscess never occurred untill the the tooth was dead.

Dr. Crooks would cut through the alveolar process and remove the diseased portion of the alveolus or root of the tooth.

Dr. Douglass said that in cases where there was little or no pain, and no outward inflammation, his plan was to clean out the pulp canal, washing it with creasote, and then sponging creasote into the abscess till it emerged through the fistulous opening. He then proceeded, at the same sitting, to fill both root and crown with gold.

Dr. Holmes thought that a great number of cases that came under the notice of dentists could be cured, if carefully and assiduously treated. He greatly valued a natural tooth. He thought that when there was any hopes of saving the natural teeth, it was the duty of the dentist to do all he could to do so.

Dr. Bancroft suggested that in difficult cases a good deal might be gained by pursuing vigorous measures for a short time, and then suspending operations long enough to allow nature to act.

Dr. Douglass advocated the application of chloride of gold, provided great care was taken in its use.

Dr. Holmes thinks that to extract all teeth with abscess would not only be a serious injury, but a wrong done to patients. He treats through the pulp canal invariably, cleans the cavity well, and applies remedies to assist nature in affecting a cure, and has been markedly successful.

Dr. Warner always opens through the canal, breaking up the sac. If the case is obstinate, treats through the alveolus, and generally finds the case yields to such treatment.

Dr. Thomas presented the case of a little girl, twelve years of age, with necrosis of the jaw, from which he had taken two teeth and a piece of necrosed bone.

A motion was made to suspend the rules making it necessary for practitioners to go through a definite course of study and graduate before they could be admitted into the Association, which called forth the almost unanimous voice of the members of the Association against "letting down bars" in *any case*, thus practically lowering the standard of qualification.

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#### ODONTOGRAPHIC SOCIETY OF PENNSYLVANIA.

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On the fifth of January, 1870, a meeting was held, the President in the chair, at which many of the students of the Philadelphia Dental College were present as visitors.

The Corresponding Secretary called attention to a superior right second bicuspid tooth, the property of Mr. A. Enos Perry, a member of the class, which his preceptor, Dr. J. L. Baker, had extracted from the mouth of a boy fourteen years of age, for the purpose of correcting an irregularity. The tooth was remarkable from having the root terminating in three well-marked cones, arranged like the roots of a superior molar, but not so widely spread. It was about the normal size, with a well-developed crown. No one present seemed to have ever seen such a case before, and Mr. Tomes in his "Dental Surgery" only mentions having seen such in the *first* bicuspid of a Chinese. The bifurcation of the superior first or anterior bicuspid is so frequent an occurrence as to make it a very fair rule by which to distinguish them from the second, which are generally found with single roots.

The same person also exhibited a pebble which he had extracted from the nares of a child; he said that, after making an attempt with a pair of forceps and finding that they only pushed it farther in, he had hooked an ordinary hair-pin over it, and with the aid of a probe had removed it. The danger of inflammation and swelling in such accidents makes it imperative to act at once, if possible before they have set in and thus complicated the operation by closing the nostril.

Prof. C. Wedl, of Vienna, Austria, was unanimously elected as honorary member, and Dr. Alfred C. Cogswell, of Halifax, Nova Scotia, as corresponding member.

The essayist for the evening, Dr. E. L. Hewitt, then read a paper on "The Irregularities of the Teeth, and their Treatment."

Dr. W. H. Trueman was opposed to the use of caps upon the molars to keep the jaws apart, especially small metallic caps, covering one or two teeth. They bring the entire force of biting upon a few teeth, at a point where the pressure is most severe, and are very liable to cause troublesome inflammation, if not permanent injury. There is also danger of the patient swallowing them : the last one he made met this accident. It was of gold, fitting the first molar quite tightly. The patient, a young miss, while sitting reading, was startled by a member of the family abruptly entering the room, and swallowed it. It immediately passed into the stomach without causing any trouble ; but she was under medical treatment several months before recovering from the mental shock of the accident and the effect of the powerful purgatives used to urge its passage.

Regular inclined planes answer the purpose much better ; the force is distributed over the jaw, and the planes not only facilitate movement of the teeth, but also prevent the patients exerting the force they otherwise might. He had used a large number of them, and found they answered the purpose nicely, especially in those cases where we are not able see the patient as often as we would like,—for instance, children attending school.

He thought the great fault and the chief cause of their failure was in *not making them large enough*. He always preferred to carry them back so as to rest upon the molars of each side ; this not only distributes the pressure, but makes the plates fit more firmly, and enables us to dispense with ligatures to hold them in position. The patients can readily remove and cleanse them. In case the patient will not bite upon them, or the teeth move too slowly, he assists them with rubber bands. He thought it very difficult to do anything without the co-operation of the wearer. It is hard enough to regulate the teeth without having at the same time to regulate the patient and perhaps the parent.

When the teeth were at all crowded, he did not hesitate to extract ; would rather have too much room than too little ; did not believe in forcing the teeth in position with the expectation of the jaws expanding to give them room. If the patient is young enough for any appreciable stimulation of the natural growth, there is danger of the maxillæ being forced apart at the symphysis, especially the upper, which in early life is not perfectly united. Accidents of this kind have occurred. If old enough to escape this danger, the formative process is so far completed as to prevent any great expansion.

When the front teeth are forcibly crowded together, we invariably find them decay early on the approximal surfaces. Very often in the effort to save one or two of the bicuspid, the six front teeth are either lost or their beauty marred forever.

We frequently meet with cases of marked irregularity, where, on simply extracting a bicuspid on each side, the teeth will fall into their natural position without further trouble. To know when and where to commence often requires more real skill and experience than in the actual performance of the operation. Nature should be allowed to do all she can before we presume to assist.

He was decidedly opposed to the use of rubber plates for this purpose; they are thick and clumsy; they do not admit of that ready adaptation to the change going on attained with metallic plates. A silver plate with platina-gold springs can be made to do the work of half a dozen plates of vulcanite, with far less trouble to the operator or inconvenience to the patient.

The idea that these operations do not pay is a mistake, at least, so far as his experience had gone, they had paid him as well as any, and far better than some of the operations he was called upon to perform. Although cases may be "hanging on" for a long time, and often require our attention, if properly managed they need not consume much time. The changes required from time to time are often quite simple, and can be made without interfering with our other operations. When busy he usually waited upon them in the reception room. A spring can be bent, a band tightened, or a ligature adjusted without disturbing, and only detaining for a few moments, a patient in the chair.

Although the actual amount of *hard cash* may be small, we must remember that it is but a small part of the fee we receive. A case of this kind, successfully treated, is a standing advertisement as long as the patient lives—known and read of all men—and not only *men*, but what is of far more importance to us, *the women* also.

The mouth of a patient is by far the best medium in which to insert a dental advertisement—providing you don't plaster it up with show-bills and posters. A *neat business card*, although packed away in some nook or corner out of sight, will find a tongue to sing forth your praise every time those pearly gates are opened.

A little money thus invested in the way of time and patience cannot fail to yield a handsome return. A dentist of this city has often related a case in point. Some forty years ago, while in charge of the

office during his partner's absence, a young man, a perfect stranger, came in to have a tooth extracted. Upon examination, he thought it could be saved. The patient consenting, he filled it with gold and charged *one dollar*, although it was a large cavity and took fully a dollar's worth of gold to fill it. His partner on hearing of it ridiculed him, saying "he would have just jerked it out and made a quarter, and not fool away a couple of hours for less than nothing." That filing is in yet. The young man, then poor, is now rich, and whenever he has a chance delights to exhibit the tooth he went to have extracted forty years ago, which, "thanks to the kindness and skill of his friend, Dr. B., is in his head as sound as a dollar." The Doctor estimates that he has received at least *one thousand dollars* clear profit from patients sent to him by that single operation. Could two hours' time and a dollar's worth of gold have been invested to better advantage? But leaving all this out of the question, let us not forget that every case we treat, if we improve the opportunity, increase our knowledge, our skill, our experience—*our stock in trade*, if you please; we do not lose, but receive in our brain that portion of the reward we cannot jingle in our pockets. To young men especially, with the world before them, these cases, if properly treated, cannot fail to yield a handsome return for all the time, patience, and skill spent upon them.

Dr. Eisenbrey is of opinion that nature is the best regulator of irregular teeth, and if not interfered with will accomplish surprising results in the way of providing room for and accommodating the teeth—as is instanced in the case of those that live rudely, and those that are beyond the reach of a dentist. *Instruction* and not *extraction* is what our patients, in their earlier years, want; and their parents to see that the instructions are carried out as much as possible. A piece of hardwood or bone or vulcanite of the proper shape, which is easily fashioned, to bite upon, is a requisite; these with oft-applied pressure of the tongue and fingers, will work wonders in the way of securing regularity in the teeth of young persons.

Nature seldom furnishes too many teeth nor of too large size. When they are very irregular and crowded, the defect is to be found in the contracted state of the maxilla, to remedy which, and to hasten or assist a further development, reason would protest against extraction. The teeth are there, and should be there until the waste and repair of the system are in equal proportion; then, if nothing else promises success, he would extract and correct. When me-

chanical appliances, ligatures, bands, etc. are needed to make the teeth regular, the patient should not be under sixteen years of age. Two or three years later is still better, for then we have the reason of our patients under better control, and the teeth then are moved sufficiently easy.

Rubber tubing and ligatures are among the indispensable mechanical appliances, and almost the only things needed for the worst cases.

The length of time regulated teeth should be held in position when corrected varies from one month to five,—much depends on the adjoining teeth; some, after being moved out or in, are kept there by antagonizing and approximating teeth—would be governed by circumstances.

Prof. Stellwagen considers that the treatment of irregularity of the teeth has been sadly neglected, and that it was mainly due to the want of general knowledge sufficient to make the proper attempts successful.

If so many dollars have been made by the performance of a plain *duty* in saving a tooth by filling, how much greater should the effort and the pecuniary return be for the retention of one that is perfect and necessary to prevent contraction of the arch of the alveolar processes, which deformity is becoming an hereditary condition of the mouths of whole families, who suffer from the effects of hasty and misguided operations.

To give an exact description of the time and modes of proceeding would be useless, without minute details of the growth and development of the teeth and maxillary bones are fully understood. There are certain general rules which seem almost to present themselves, and should be followed as closely as possible.

Having in mind that *the object is to bring about a normal condition*, the indications are clear that we should endeavor to retain all the teeth that nature designs to act as permanent organs, and place each in the natural position with relation to all the surrounding parts.

To do this there must be no alteration of the teeth themselves, by filing to gain room or pitting to adjust apparatus. Hard plates of metal must be used with caution, lest they abrade, and all unhealthy conditions must be combated. Cleanliness must be strictly observed, and undue irritation avoided, while inflammation is controlled by local and general means. Where it is necessary to cap teeth, gutta-percha is preferable, as it does not cut or wear the teeth as plates do; it is sus-

ceptible of ready and perfect adaptation, and, from the ease with which it may be altered, can be changed to suit the modifications that arise as the teeth move; and it further presents a softer surface for the occluding teeth to strike upon, thus partially avoiding periostitis. He suggested, where metal caps are used, thin platina plate pressed over models of the teeth and stiffened by flowing gold over them then, with saw or file-cuts, making them so as to spring over the tooth.

To bring the teeth into proper position, steady, constant, and not too severe pressure is needed. This is, perhaps, best attained by ligatures and rubber springs, and the patient is prevented from removing or interfering at pleasure, while, at the same time, the annoyance does not usually equal that occasioned by the use of more bulky materials.

Perhaps the most important matter is to avoid the complication of the difficulty by unwarranted interference, such as the use of too harsh or untimely measures to reduce the deformity; and, above all, *the premature extraction of any teeth, particularly the canines*, is a very tempting but objectionable practice.

The rule that the deciduous teeth should be allowed to remain until the corresponding permanent teeth present, seems so self-evident that it is only mentioned, as in numerous cases met with by him, it has been neglected. Indeed, the shedding of these organs is a matter that is generally best accomplished by nature. Almost always they may be left in their position without harm, unless the permanent teeth present posteriorly to the arch in the upper, or anteriorly in the lower jaw, or where, by being wedged in, they interfere with the natural forces of the replacing teeth.

He thought the remark once made by Prof. Stille, could not be too well known: "Nature is a most excellent handmaid, but terrible mistress."

He rarely used plates; their inefficiency and the dangers attending their use are evident to the most casual observer, and the gilling twine ligatures, with rubber, and occasionally gold springs, had accomplished all the tasks which he had met with for the last four years, and this more easily, readily, and at less expenditure of labor, money or time. For the perfection of this method of orthodontia we are greatly indebted to Profs. Flagg and McQuillen. Finally, he could not close without calling attention to a very instructive and novel course adopted by the latter; a description will be given in the DENTAL

COSMOS,\* and a series of papers by the former,† all of which would repay those desirous of information for hunting up and reading.—  
*Dental Cosmos.*

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## SELECTED ARTICLES.

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### OF WHAT USE ARE OUR PROFESSIONAL MEETINGS ?

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It contributes to improve us in our social relations, elevating us both intellectually and professionally, each contributing his share of Dental knowledge, acquired during the intervening time, noting what he may have seen or done, and communicating to his fellows what might seem to be important or useful ; stimulates us to higher accomplishments, elevates us in each other's esteem, thereby indirectly in the estimation of our patrons—for in proportion as the brethren respect, and speak courteously of each other, so will our patrons estimate us, both as to our moral and professional character ; our frequent gatherings prevent or annihilate that prejudice or jealousy that many of us may have been imbued with, and which is engendered and fostered by estrangement ; it dissipates those disagreeable feelings some may have harbored while making a call on a brother ship—a consciousness of having stolen sheep on his back, and a fear of being caught, perchance apprehensive that some of his own patients might see him, and he thereby be lessened in his patrons' estimation.

Let us take another view of our meetings. When anything new or useful is presented, and we make no objection to it, giving it at least our silent approval, do we always try it and ascertain for ourselves its relative merits, or, after trying it, do we report the same at a subsequent meeting, relating our own experience ? Not very often—and yet it is our undeniable duty, for by doing so we give encouragement to those who freely communicate their experiments. Why is it we have so many patents in our profession and none in the medical branch ? (save patent medicines)—and yet there are as many improvements made for the amelioration of suffering humanity, in that branch as in ours. That question was asked not long since. This rich answer was given : “ Dentists generally were such *worthy* sub-

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\* “ Hereditary Transmission of Dental Irregularities.” Published in the *DENTAL COSMOS* for January, February, and April. 1870. pages 27, 73, and 193.

† *Orthodontia.* Ibid., vol. vii. pages 14, 64, and 468.

jects to be Doestick's companions—that it required a patent, to make a Dentist try it, take hold of it, and use it.” I thought the man was disposed to be cynical, particularly so when he added: “They wont try anything good or useful, or pay any attention to it—unless it is ushered into their presence by a patent—then he at once becomes convinced—or instruction from a clever peddler forces conviction, and the tin is transferred.” Some time since Prof. Judd presented improve pluggers, to facilitate the filling of the distal proximate cavities of the back molars, no report made. Prof. Eames obtained a dublicate set, no report from him. I borrowed his pluggers, used them, found them a decided benefit, no report from me. I was favored with a loan of Dr. Morrison's Dental Chair, found it to be superior to any I had previously used, and yet I have manifestly been delinquent in not having reported. This remissness on our part to report has a tendency to discourage any one from presenting any useful offering, and yet that simple offering might prove of great value.

Again, for many years I have been in constant use of Mr. Chas. Hunt's diamond dust, (as he calls it,) and it was pronounced to be the best material for smoothing and polishing India Rubber plates, requiring only one grade and accomplishing the work in less time, and I was so highly pleased with it for finishing fillings, that I sent samples to several dentists abroad—no report from any on its comparative merits,—and from only one acknowledging thanks for sending it,—yet, I continue its use in preference to any thing else.

Again, how many of us have tried the suggestions of Dr. Black, in so far at least, as never touching the foil with our fingers? Who ever tried the wooden compressor instead of the tin, or chamois foil roller instead of the india rubber? We know that every little, apparently insignificant, item that has any tendency to deteriorate the essential properties of the foil, must in the aggregate, destroy its integrity, and thereby prevent us from realizing those agreeable anticipations when we say to ourselves “I intend to spread myself in filling this tooth.”

The simplicity of many offerings may cause an indifference to give it a trial, when in fact, its simplicity makes it the more important, and offers greater facilities for instituting a comparrison on its merits.

When any member relates his experience he believes it to be new, and beneficial, both to us and our patients, either in Medicine, or

Surgery, or Mechanical Dentistry, and it, therefore, becomes our courteous duty to investigate the same and report.

This applies not only to those subjects related in our society, but also those presented through the medium of our journals, for by so doing, we are much more likely to retain it in our memory, and will better enable us to maintain the enviable reputation we now enjoy among our professional brethren abroad—preventing us from becoming old fogies, or Doestick's companions.—*Missouri Dental Journal*.

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#### HYDRATE OF CHLORAL.

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The distinguished Dr. W. A. Hammond publishes in the *New York Medical Journal*, the following interesting and important article upon chloral. Although it is long, we feel that our readers will thank us for placing it before them :—

All the experiments which have been performed with the hydrate of chloral, whether upon man or the lower animals, go to show that it is a powerful hypnotic ; but there is a difference as to whether the first effect is not the very reverse of sedative. Demarquay has shown by *post mortem* examinations that it produces congestion of the brain and its membranes ; but his researches are, in this respect at least, very precise, for they do not touch upon the point of different effects being produced by different doses ; nor was any accurate examination of the state of the cerebral circulation made during life. My first object, therefore, was to determine the influence of hydrate of chloral over the cerebral circulation.

*Experiment*—I examined very carefully with the ophthalmoscope, the retinae of a rabbit, and ascertained that they were in a normal condition. I then injected several grains of the hydrate of chloral, dissolved in water, into the cellular tissue, and two minutes afterwards made another ophthalmoscopic examination. The vessels were decidedly increased in size and several that were previously invisible made their appearance. The pulse and respirations were both increased in frequency. At the end of five minutes another retinal examination showed increased congestion, not only of the retinae, but of the optic disks. The pupils were largely dilated. After seven minutes had elapsed, the animal exhibited signs of drowsiness. The pupils began to contract ; and examination with the ophthalmoscope showed that the retinal congestion was greatly lessened. At the end

of ten minutes sleep was profound. The pupils were strongly contracted; the temperature had fallen four degrees; the action of the heart was less frequent; the respirations were diminished, and the retinæ were of a pale pink color, with but two or three very minute veins visible. At the end of two hours the sleep was very deep; the respirations were feeble and slow; the ears were cold, and the retinæ were pale and exsanguined. After nine hours and twenty minutes the animal was found awake, and in a perfect normal condition as regards temperature, circulation, respiration, and the condition of the retinæ.

This experiment was repeated three times, and always with similar results.

Now, as is well known, the ophthalmoscopical examination of the retinæ affords very exact indications as to the condition of the cerebral circulation; but by means of an instrument devised, though in somewhat different forms, by Dr. Weir Mitchell and myself, independently of each other, we are enabled to determine the point directly. This instrument, which I venture to call the cephalohæmometer, consists of a brass tube which is screwed into the opening made into the skull with a trephine. The lower end of the tube, which rests upon the dura mater, is closed with a very thin piece of India rubber cloth; the upper end of the tube is closed with a brass cap, into which a glass tube is inserted. To this tube a scale is attached and the brass tube is filled with colored water, so that when it is screwed into the skull, and the end touches the dura mater, the level of the liquid stands at zero. When the apparatus is in place and properly adjusted, it is very evident that any increase in the amount of blood circulating through the brain will cause the dura mater to press with increased force against the rubber membrane, and will thus cause the liquid to rise in the glass tube. Any diminution of the circulating fluid will cause the level of the liquid to fall. We have thus a very accurate means of measuring the cerebral hæmostatic pressure.

*Experiment.*—I operated on a rabbit with a small trephine, and inserted a cephalohæmometer. As soon as the instrument was *in situ*, I injected seven grains of hydrate of chloral into the cellular tissue. In one minute and ten seconds the fluid began to rise in the tube, and in three minutes it stood at a point an inch higher than the normal level. After five minutes it was an inch and seven-eighths higher. This was the maximum point. It now began to

fall steadily, and in two minutes and fifteen seconds reached the zero, the point from which it had started. Coincident with its further depression, drowsiness came on, until when the level was about an inch below zero, the condition of sleep was well established. The fluid continued to fall till the level was two inches and-a-half below the zero, which point was reached in thirty-two minutes after the injection was made. It remained stationary about an hour longer, and then fell about a quarter of an inch lower. It was not further depressed. After the lapse of seven hours and forty minutes it began to rise, and with this change the respiration, which had been feeble, became stronger and more rapid, and the animal exhibited signs of returning animation. At the end of nine hours and twenty minutes the animal awoke, and the level of the liquid, which at the time was about half an inch below the zero, rose rapidly to the original point. It continued to rise for a few minutes, but gradually fell again to the zero. This experiment was repeated on three other rabbits, and similar results elicited.

Up to this time, it will be observed, that what may be called large doses for rabbits had been employed. Desirous of ascertaining the effects of a small dose, I performed the following experiment :—

*Experiment.*—Having adjusted the cephalo-hæmometer to the skull of a large rabbit, I injected under the skin a solution containing one grain of the hydrate of chloral. The water in the tube began to rise in a minute and forty seconds, and at the end of five minutes was three-eighths of an inch above the zero. The animal continued lively, and the pupils were dilated. The respiration and pulse were both accelerated. In half an hour the level of the liquid was at its highest—about three-quarters of an inch above the starting point. It now began to fall slowly, and in fourteen minutes was at the zero. During the whole time of the experiment the animal showed no signs of sleep, but was, on the contrary, unusually active. Ophthalmoscopic examination revealed the existence of a state of congestion of the retinae, which lasted till the liquid in the cephalo-hæmometer had fallen to its original point. The experiment was repeated, with similar results, on two other rabbits.

Demarquay found as one of the results of his investigations, that the hydrate of chloral in large doses produced continued congestion of the cerebral blood vessels of the rabbits to which he administered it. His observations were made *post mortem*, and cannot, therefore, be considered as altogether reliable. The congestion was in all probability, caused after death.

To be still further assured upon that point, I performed the following experiment:—

*Experiment.*—I removed from a large rabbit nearly one-half of the cranium, and opening the dura mater, laid bare the cerebrum and its membranes. I had thus almost the whole superior and external surface of one hemisphere exposed to view. I now injected one grain of chloral into the cellular tissue. In about two minutes the surface became redder and the vessels larger. I now injected five grains. The surface of the brain became of a dark blue color, and protruded through the opening in the skull. In something less than five minutes, however, a change ensued. The color gradually changed to red, the brain sunk again below the surface of the opening, and a state of anæmia ensued. With these changes the animal fell asleep. At the end of half an hour the surface of the brain was colorless, and no blood vessel could be perceived. After seven hours and thirty-three minutes from the first injection, the brain again resumed a pale red color, and the animal awoke.

I regard these experiments as showing conclusively that the first effect of hydrate of chloral is to cause congestion of the cerebral blood vessels, and that subsequently it induced the opposite condition. With a small dose, this latter effect is not reached, congestion only being produced.—*Boston Journal of Chemistry.*

(To be Continued.)

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## PERMANENT SETS OF ARTIFICIAL TEETH.

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BY D. L. OVERHOLSTER, M.D., LOGANSPOUT, IND.

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There are several points which seem to me of considerable importance in regard to so-called permanent sets of artificial teeth, which are seldom if ever alluded to in either the dental periodicals or societies, and in regard to which the only text-book I have upon the subject is unsatisfactory. Among these is the length of time that should elapse between the extraction of teeth and the insertion of artificial substitutes. The instructions I have seen upon this subject seem to be based upon the idea that after a certain period, varying from six months to two years, or an average of about a year, all changes affecting the fit of a plate cease. That this is a fallacy it requires but little observation to prove. Who has not frequent opportunity of

seeing mouths which, in consequence of having been for a long time without teeth, have undergone changes that make the insertion of satisfactory substitutes very doubtful? That the wearing of plates lessens these changes can scarcely be doubted; but that they generally continue in some degree, even with the use of plates, seems to me equally beyond doubt. There probably are exceptions, but I do not remember ever seeing a plate that had been worn from five to ten years that fitted as tightly as a new plate ought to. If, then, there is no time when the "gums" become unalterable, how long is it necessary to wait to avoid the consequences of rapid change? I have no exact data from which to determine this point definitely, but probably every dentist of experience has observed numerous instances where temporary sets, inserted in from two to four weeks after extraction, were worn year after year,—in some cases, to be sure, after they ceased to be comfortable, but in other cases where they continued quite satisfactory. So often have the people observed this that, where the foolish practice of inserting temporary sets for a mere nominal sum still obtains, patients frequently expect from the first to escape the expense of a permanent set. If a set of teeth, no matter when inserted, is useful a year after extraction and afterward becomes useless, it is evident that the trouble arises in part from changes occurring more than a year after extraction. My general observation has led me to believe that, ordinarily, rapid changes do not continue beyond three or four months after extraction, and consequently that it is sufficient time to wait for the insertion of permanent sets.

Another important question is, How long do permanent sets of artificial teeth on an average last? The question is of practical importance, as having a bearing upon an evil cherished by many in and out of the profession,—namely, that of neglecting or sacrificing natural teeth for artificial. Persons frequently neglect their natural teeth, on the supposition that it will cost them much less to have them removed and artificial ones substituted than to have them preserved. While this supposition may be correct in some cases, still, it is evidently based upon the false consumption that if once an artificial set is secured there will be no further expense while they live. In fact, a lady told me once that a dentist had insured her gold set for her lifetime; and, if I remember rightly, he had made her the second set on gold; and later, rubber came to his relief and was used for a third set, he taking the gold. Webster, says: "Permanent is

equivalent to durable or lasting, but not to undecaying or unalterable." If it meant the latter, it could certainly not fairly be applied to artificial teeth in their relations to the mouth. Changes in the mouth affect the continued usefulness of a plate in two ways: first, by making it difficult or impossible to retain it in place; and secondly, by depriving it of proper support, it is liable to break from the increase of strain of mastication. This I believe to be a very frequent cause of breaking of plates in the mouth, of whatever material they are made.

To these causes must be added the various accidents to which they are liable out of the mouth, and the recklessness with which some persons use them. I have no statistics from which to form an estimate of the average duration of permanent sets, but my impression is that full sets on rubber average from five to eight years; partial sets on the same base considerably less, and whole sets on gold somewhat more,—say ten years. Suppose, then, a person neglecting his natural teeth on the score of economy, begins with a partial set, which he may find it necessary to have replaced before desiring to part with all his teeth; later he gets an entire set, which, in addition to occasional repairs, requires to be renewed every five or ten years; and the financial argument—that which to him is the most weighty—will upon examination be found less favorable to artificial teeth than it seemed at first sight.

Another question worthy of attention is this: Are not those changes which are constantly going on in the mouth destitute of natural teeth, even where substitutes are worn, liable, if commenced early in life, to become so great before old age is attained as to make the continued use of artificial teeth impracticable? If so, it ought to be known, as it might tend to check recklessness in regard to the natural organs.

The above has been written rather to get an expression from others upon the points involved than to determine them myself, and I hope I will not be disappointed.—*Dental Cosmos*.

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### WORK AND REST.

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In these days of fast living and hard working, when every nerve is strained to get the most done in the shortest time, it is well to remember that the

"Sweet vicissitudes of rest and toil make easy labour."

It is not so much for physical toil that the present day is noted;

though there is abundance of that. The heaviest strain is upon the nervous system. We multiply our engagements, increase our business, and often introduce an element of labour into our very amusements. The best workers will be found to do a few things thoroughly, and things of so opposite a nature that the very change of work becomes a relief.

But absolute rest is a necessity; and that is obtained in sleep. Good workers have a faculty of sleeping well and soundly, some of them may only sleep for a short time, but it is thorough. They enter a dreamless land almost the moment their heads touch the pillow. For such, a shorter period of sleep may be sufficient than for others. But every man has to be a rule for himself, provided he has sense enough not to stint himself of "Nature's sweet restorer." Eight hours will meet the necessities of most people. Those, however, who do the most mental work need the most sleep; and it is too often the case that they are the very ones who allow themselves the least.

But, apart from sleep, we need more quietness in social life. Our evening gatherings are too numerous, and partake too much of the nature of public meetings, with this difference, that they are protracted to a much later hour. The object of a social gathering is supposed to be enjoyment and relaxation. But when it extends so far into the night as to rob us of our needed rest, it becomes a labour in itself, and leaves behind it a weariness of soul and body.—*Canada Health Journal*.

## CORRESPONDENCE.

SIMCOE, May 3, 1870.

To the Editor of the "*Canada Journal of Dental Science*."

SIR:—Dean Trench, in lectures on the study of words, gives some notable examples of human perversity, ingratitude, and the like, indicated by words and expressions which have come down to us from other days. Some future philologist will, no doubt, find enough in some of the expressions now current, to lecture his audience upon the mental and moral peculiarities of the present generation. When he finds the words *nulla bona* upon a return writ, he will be able to say that they do not necessarily mean *no traps*, but that they have a deeper significance; he will be enabled to say such an expression in-

dicated a violation of law, and an evasion of its penalties. It is said to be an impossibility to frame a law that cannot be driven through with a coach and six. I am inclined to yield assent to this saying. At any rate, the Act respecting dentistry in Ontario is puerile to a *cobbler and all his kit*, if not to a coach and six.

In the county of Norfolk there are seven persons practising dentistry in contravention of the Act of '68. One of these, a short time since, was convicted before two magistrates, and fined accordingly; but though a married man and keeping house, his brother steps in and claims his *kit* and every article of furniture in his establishment, and thus prevents the execution of the penalty. He goes on setting the law at defiance, and laughing in his sleeve at the impotence of Ontario legislation.

Permit me, sir, to suggest that, as soon as possible, the members and licentiates of the Royal College of Dental Surgeons petition the Legislature to so amend the Act of '68, that parties violating it, and having *no goods*, be liable to such other punishment, by imprisonment or otherwise, as to protect society from the consequences of ignorance and impudent pretensions.

Yours fraternally,

LYMAN WELLS.

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## EDITORIAL.

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### DENTAL INCORPORATION IN NOVA SCOTIA.

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In September 1868, we advocated the extension of dental legislation to Nova Scotia, and we were glad to hear some time ago that our friend Dr. Cogswell of Halifax and some others who have the honor of the profession and the protection of the public at heart, rather than their pecuniary interests, had made a move towards obtaining an act of incorporation. We are much surprised, however, to learn that though the law was passed in the House of Assembly, it was finally defeated in the Upper House, and that honorable gentleman of the Local Legislature stated that no laws were enacted anywhere in the Dominion, to regulate the practice of Dentistry. We happened lately to see a number of the *Halifax Citizen*, and were not surprised to meet with a flaming advertisement of a little humbug named De C., who left this Province for its good, some seven or eight years ago, just in the nick of time to save himself from arrest. If anything would arouse our sympathy

for the Nova Scotian people and the profession of our sister Province, it would be the fact that De C. is around there, seeking what he may devour. Ten years ago he was perambulating the suburbs of our cities, and the country districts, where he used to collect crowds in the streets, and spout upon the care of the teeth ; cleaning discoloured teeth with nitric acid, filling front cavities with filthy amalgam, extracting useful masticators wholesale, to insert the worst kind of artificial work. In 1863 he was unable to make a set of teeth, and engaged a Montreal dentist to work upon his cases, and finally finding the country too hot for him, and after utterly destroying valuable dentures and disfiguring hundreds of people for life, he dissappeared one morning, to the sorrow of his landlady, and to the grief of his "friends." De C. is a small man physically, but he was giant humbug when in this Province, and judging from his advertisement, we should say that his reputation in that respect has not at all diminished.

As the only organ of the dental profession in the Dominion, we appeal the intelligence of the Nova Scotia Legislature, in behalf of those dentists who aim to elevate the social and scientific character of the dental profession in Nova Scotia and to protect the public from the imposture of dental quacks. The Provinces of Ontario and Quebec now enjoy this protection, and the De C's., Stewarts and Edwards have left or are leaving for—perhaps Nova Scotia. We are much surprised that intelligent people anywhere cannot or do not appreciate the importance of protecting the public from the quackery and robbery of dental as well as well as medical charlatans. Pennsylvania, New York, Indiana, Ohio, North Carolina, Delaware, &c., have or are about to have legal protection, and perhaps when Nova Scotia is overrun with the imposters who find their occupation gone elsewhere ; perhaps when reputable practitioners have left the field digusted, and plausible quacks remain to treat important members of the human body such as the teeth, perhaps then the Upper House of Nova Scotia may have good cause to regret their vote upon their dental bill. We appeal to them now, to redeem the intelligence of their Province, and give a mutual protection to the public and the dental profession.

W. G. B.

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#### THE VALUE OF DENTAL LEGISLATION.

When the dental bill for Quebec was passed, certain wiseacres looked knowingly, and pooh-poohed the whole affair, as of no more

consequence than a Fenian proclamation, or a "message" from the lunatic, George Francis Train. The Montreal *Herald* and *Witness*, in the usual jumble-style with which those organs manage to treat questions they do not understand, vented forth their respective columns of editorial bosh, which served to fill their papers, but not to increase admiration of the judgment of their editors. Certain practitioners, too, having taken legal advice, expressed their determination to resist the requirements of the law. But "a change came over the spirit of their dream." Editors and lawyers have been proven fallible, and it is now believed that our legislators did know what they were about when they passed a *retroactive* law; and that in spite of legal advice to the contrary, the dental Act was intended to be, and can be enforced.

The Quebec Board fully determined to show these wiseacres that they could enforce the law, and in one particular instance, which, if we are not mistaken, is without a parallel in the history of dentistry or medicine in Canada. In Section 17, the Act provides that the Board must be "further satisfied that he (the applicant for license) is a *person of integrity and good moral character*;" and with one of the applicants for license at the last meeting of the Board, a test was determined upon.

Some months ago, an individual named C. H. Stewart, hung out his shingle in Montreal, and attracted considerable attention by the lowness of his prices, and the marvellous promises he made. Without any trouble or investigation on the part of the Board, documents and a photograph were produced at the last meeting, identifying Mr. Stewart as a dentist named C. Sill, who ran away from Pittsburg, Pa., with a woman named Kate Fry, leaving a wife and several children in a state of destitution; and that the said Kate Fry was living with him as his wife. A Montreal comic paper, *The Free Lance*, got hold of the circumstances, and as our readers will see below, made Mr. Stewart's name still more notorious in the eyes of the Montreal public. After such publicity, the Board determined to reject Mr. Stewart's application, and did reject it, on the sole grounds of "immoral character." So satisfied was Mr. S. of the position of the Board, that he at once retired from the profession.

Nothing will win more respect for Canadian law, than just such action on the part of corporate bodies who have the legal power to rid society of the contamination of scoundrels and knaves, who escape Sing-Sing, and expect to find position and honor in our Dominion. If such an individual merited punishment in the eyes of the civil law—and that no honest man will deny—then it is fortunate for society that a Dental Board of Examiners possessed and used the power to expose such unnatural conduct. Not only every licentiate, but every good citizen has a personal interest in at least

*ejecting* from a respectable position, every dentist who thus sullies the moral code, and the honor of the profession, and who has the sharpness to escape an apprenticeship in a penitentiary. W. G. B.

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### DOCTOR SILL.

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"A dentist named C. Sill who ran away from here with a woman named Kate Fry, leaving a wife and several children in a state of destitution, has been traced to Canada, where he is practising under the name of Stewart."—*Pittsburg, Pa., Commercial*, March 10.

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Ah! Doctor Sill, to run away,  
And leave your "better fraction,"  
And olive-branches, was, we think,  
A very *sill-y* action.

In fact, we are inclined to say,  
—Now, please, don't shed our blood, Sill,—  
That, in the language of the South,  
You are a precious "mud-sill."

A dentist, too—well hold your *jaw* ;—  
Canadian skies beneath,  
By *gum*, there are some folks who dare  
To cast it in your teeth.

Kate Fry!—such an appropriate name,  
But rarely meets our eye.  
Were you sick of domestic broils  
That you preferred a *Fry*?

Consistent too, untill the last,  
Your *nom-de-guerre* shows true art,  
For you've converted Mrs. *Fry*,  
Into a Mrs. *Stew-art*

Ah! Doctor Sill, ah! Doctor Sill,  
This is no theme for laughter,  
Take care lest *Fry-ing* be your fate  
In this life and hereafter.

—Free Lance.

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### MEETING OF THE ONTARIO DENTAL SOCIETY,

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Again we call the attention of our readers to the circular which has been, or will be forwarded to every licentiate of dentistry in this Province, whose address is known to the Secretary of the Society, from which it will be seen that a large, varied and most interesting "bill of (Dental) fare" will be served up for those who attend, and we hope to see a much larger number in attendance than ever before. Very wisely, we think, it has been decided to hold but one meeting of the Society in each year; and certainly each and every dentist should make a point to be present, and come prepared to give a report of success in some of the various operations which we are all called upon to perform, or to report whatever failures he has made.

We copy in this number an article from the *Missouri Dental Journal*, on the subject of "Our Professional Meetings," which we think is so full of plain, homely, good sense, that we have great pleasure in calling the attention of our readers to it, and trust that they will "read, mark, learn, and inwardly digest," and act on the suggestions contained in it.

The meeting will be held in Halley's Hall, corner of Bay and King streets, Toronto, on Tuesday the 7th of June, at 2 P.M., and the election of the new Board will take place at seven o'clock in the evening of the same day.

C. S. C.

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### THE USE OF AMALGAM.

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Not long since a dentist of Montreal, by the name of Bowker, who, we understand, entirely ignores all associative and legislative action for the improvement and elevation of the members of our profession, wrote an article to the *Canada Medical Journal*, against the use of amalgam for filling teeth, giving a statement of its chemical proportions, etc., which we considered to be very erroneous in many respects. The general tone of the communication, and the fact that it was sent to a medical instead of a dental journal, for publication, led us to believe that it was written as an advertising dodge for the purpose of securing the patronage of the medical profession in his locality, and had he not stated that the teachers of the Royal College of Dental Surgeons, of Ontario, instructed those who receive their licenses from that institution, to use amalgam in ordinary practice, we should never have thought of noticing his effusion. Even then, we decided not to waste any powder on such small game, and we would not do so now if our Baltimore name-sake had not copied the article from the *Medical Journal*, which might lead some of our American cousins to think that we, in Canada, instead of advancing with the times, were retrograding to the medieval ages. The *Missouri Dental Journal*, in speaking on this subject, says: "As stated by the editor of the *American Journal*, in his review of this article, much that is said about the employment of base metals as a filling for teeth is true, but we prefer to hear from the *Canada Journal of Dental Science* upon this subject, before we shall be satisfied that the Royal College of Dental Surgeons, at Toronto, have recommended it for general use."

We beg to say that the teachers of our Canada College have never "recommended it for general use," or to be used at all except in very extreme cases. We do not entirely and utterly condemn amalgam as some of our confreres do, because we do now and again meet with teeth too frail, or not sufficiently firmly fixed in their sockets, to admit of any but the gentlest handling, where the force necessary to condense gold properly cannot be borne, and under such circumstances we would certainly use amalgam, rather than compel a person to lose a tooth which is of great service for mastication.

C. S. C.

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[No. 11.]

ORIGINAL COMMUNICATIONS.

EDITORIAL NOTES ON PRACTICAL SUBJECTS.

DESTROYING THE VITALITY OF THE PULPS OF TEETH.

BY W. GEO. BEERS.

Whenever it is absolutely necessary to destroy the vitality of the pulp of an incisor, cuspid, or bicuspid, previous to filling, I prefer doing so by immediate extirpation with an instrument, if possible, rather than by means of arsenic. Any one acquainted in the smallest degree with the anatomical and physiological character of the tooth structure and adjacent parts, must admit the occasional tendency of such poisons as arsenic to be absorbed beyond the particular point for which they are intended; and also the risk one runs in using it at all in the highly vascular teeth of children, and where the full development of the fangs may not have been an accomplished fact.

That arsenic has been a boon to the intelligent dentist, who could discriminate when and how to use it, is not denied; but that it has led to grave mistakes and much malpractice, particularly in the hands of quack practitioners, is a fact which any honest man, using his ordinary powers of observation, can scarcely venture to dispute. The possession of a substance which will mitigate the agony of hyper-sensitive dentine, and rid the quack of the impediment of an exposed pulp, is a substance sure to be abused, and a dangerous article to admit into the dental pharmacopœia. Unquestionably, many pulps are destroyed by its use, which are worthy of conservative

treatment; and we seriously question, if the amount of harm it has been made to do in our specialty has not doubly counterbalanced its good, since the time of its discovery.

The destruction of the pulp of a tooth by arsenic or any other similar poison, has always seemed to me to be contrary to pure science and philosophy. I cannot understand the great merit of introducing a known deadly poison into the cavity of a tooth for the destruction of its pulp, which is so often followed by hours of intense pain, and subsequent irritation of the surrounding tissues showing an unnecessary and undesirable extension of its effects. In every instance where it is applied, there is also a certain amount absorbed into the dentinal tubuli, with results which can certainly never be for the health and longevity of the tooth. The pulp, too, is reduced to a decomposed mass, like so much putrid meat, which in nine cases out of ten can hardly ever be as thoroughly removed as one alive. The presence in the canal of this decomposed mass, is followed by more or less generation of gases, and absorption of both into the tubuli and through the foramen, causing frequent irritation, inflammation and alveolar abscess. The poison once introduced, and the pulp once decomposed, there is always a possibility of future irritation, whether the tooth is filled or not. The broach or other instrument used to remove the dead mass forces portions of it towards the foramen; whereas by extirpation of the live pulp, it can often be removed entire at once. It is nothing very rare to take out a whole pulp hanging to the end of the broach like a minute worm on a hook, though we often meet with canals too small to admit the broach sufficiently far enough. I then extract all I can; dose the cavity with strong creasote and iodine for a day or two, cleanse the root and fill.

Extirpating a pulp is a delicate operation. It must be done knowingly and deliberately. Previous to attempting it, remove as much decayed dentine as possible in the vicinity of the pulp chamber, and obtain free access to the cavity of the tooth, and an uninterrupted view of the pulp. A good surgeon should not make a slip. Inject gently a little warm water into the cavity; with a small strip of punk absorb the moisture; apply carbolic acid and morphia for a few minutes, which will partly numb the head of the pulp and render it more tolerant of interference. Dip the broach in the preparation and commence by *slowly* inserting it, proceeding according to the temper of the pulp. I believe the principal pain often caused at this

time is owing to the neglect of a few preliminary rules, such as enlarging the edges of the chamber and exposing the pulp as much as possible with a very sharp excavator. Unnecessary pain is given, too, if the broach is inserted directly into the pulp, instead of being gradually coaxed up closely to the sides of the chamber. The pain is greater, too, if the broach is barbed on all sides. Such a broach is barbarous. It should have a smooth side, and this side should be kept next to the pulp, and the barbs towards the bone. When it is sufficiently far up, revolve it once or twice, bringing the barbs against the pulp, and quickly draw it out.

In some cases we can so deaden sensibility by the use of carbolic acid and morphia, that the pulp can be removed with comparatively little pain; but what are we to do when the patient is nervous and irritable, and the least touch is the height of agony? What are we to do with the large number of cases met with, when the patient will not stand experimenting? In such cases, rather than use arsenic in the incisors, cuspids and bicuspid, which nearly always become more or less blue after its use, I prefer extirpation when the patient is under the influence of an anæsthetic. If it is proper at all to administer anæsthetics for dental operations, I know of no occasion demanding them more than the extirpation of a live and kicking pulp. For some time back I have experimented to discover something to obtund the sensibility of the pulp during the moment of extirpation. The idea of applying a substance which would at once act upon the fleshy pulp, robbing it of sufficient vitality, *without decomposition*, to permit of its painless and immediate extirpation, was suggested to me by observing a corn-doctor applying belladonna to an extremely sensitive corneous tumour on one of the little toes of a friend. After a few moments the base of the corn, which was buried deep in the integuments, entirely lost its sensibility, and the foot, which at first was comparatively soft, was removed in one hard piece, very similar in appearance to gluten. I have tried a number of articles to bring about a similar effect on the pulps of teeth, but so far have not been at all successful. I have also tried the electric current directly upon the nerve by means of a broach, but found it increased the pain. For the removal of pulps of low vitality and far gone disease, *which cannot be saved*, it would be a great boon to have a substance to take the place of arsenic in the manner mentioned. It should invariably, however, be the principal, to make every effort to preserve before deciding to destroy.

## THE HYGIENIC MEANS OF PRESERVING THE TEETH.

BY G. O. FISET, D.D.S., QUEBEC CITY.

The teeth are a set of organs which are often neglected, that is, the proper hygienic means for their preservation is not known by patients, or if instructed by their dental attendant, they refuse or neglect to perform the duties necessarily attending such advice. We all know by the least experience and practice that the ravaging influence of decay cannot be counteracted altogether, but it can to a certain degree. The dental tissues belong to that class of tissues of the human organism which have not the power of recuperation.

Caries dentium is the most ravaging disease by which the dental structures are attacked, and is a mortification of the dentinal fibrillæ and a decomposition of the dentinal salts, induced by chemical action; its causes may be divided into, predisposing and exciting. The predisposing causes are, the relation of the teeth to each other, their malformation being incidental upon the diseases of dentition and infancy, thereby preventing a sufficient deposition of calcareous salts, involving an improper fusion of the enamel at the points of junction, and as a consequence producing an abnormal formation of the organs, the dentine being in that manner exposed to the action of deleterious agents. The exciting causes are, the action of certain agents forming part of our food upon the dental tissues, changes of temperature, many of the medicines administered for the treatment of disease, especially tonics, which are frequently acids, not only acting upon the dentine but also on the enamel; all diseases, constitutional as well as local, affecting the salivary secretions.

Acids, both vegetable and mineral, decompose the salts of the enamel as well as those of the dentine. The acid penetrating to the dentine from a defect in the formation of the enamel, as before stated, or a small crevice caused, perhaps, by the biting of hard substances, (which should be avoided as one of the necessary means of dental preservation,) or by thermal changes, the dentine having thereby become exposed; in that manner the foundation of a cavity is laid, and albuminose as well as vegetable and other substances lodging in those crevices or depressions, and there fermentation occurs, the same action being communicated to the surrounding tissue, its very decay generating an acid, the consequence being that we often discover large cavities with small orifices. Those acids chiefly used as articles of food are, viz.: acetic, (vinegar), citric, malic and tartaric.

They all combine with the earthy base of the dental structures to form new compounds. Dr. Westcott has discovered, in his experiments on the action of food upon the dental organs, that acetic and citric acid so corroded the enamel in forty-eight hours that much of it was removed with the finger nail, but citric acting more readily than acetic. Malic acid, (the juice of apples,) and the acid of some of the other acidulous fruits also corrodes the teeth. Tartaric acid is the acid contained in raisins, it acts more promptly than any of those already mentioned. The acidulated beverages such as cider, orangeade, lemonade, lime juice, vinegar syrup, &c., are often taken during the hot season on account of their refreshing properties, and in order to counteract their evil influence upon the teeth, an alkali should be given to patients as a mouth-wash, composed of

Rx Sodæ Bicarbonas, dr. 1,  
Aqua, F. oz. 4.

If acids of any kind, or acidulous fruits be taken, the above should be used immediately.

Muriatic, sulphuric, nitric and lactic acids are remedies frequently given as tonics, and physicians should be careful in administering them through a glass tube in order to protect as far as is in their power, those valuable organs without which the process of digestion cannot be properly performed. Dr. Westcott says: Sulphuric and nitric ethers have a similar deleterious effect, these are frequently used as diffusible stimulants. The acids of some of the salts also corrode the teeth. Super-tartrate of potash, or cream of tartar destroys the enamel very readily. This article is frequently used to form an acidulated beverage. (It is also the basis of certain popular dentifrices, which whiten the teeth by corroding their surfaces.) It is easily understood that the acids of some of the salts given as medicines corrode the teeth, their acids having a greater affinity for the enamel and dentinal salts, a new compound being formed by their combination. Potassa fusa, although an alkali, acts injuriously upon the teeth, it has no effect whatever on the enamel, but it unites with the organic matter of the dentine.

As I said before, the position of the teeth and the fissures or indentations attending their malformation, are receptacles for both vegetable and animal food, particles of which are retained into those minute depressions or between the teeth after eating, and there fermentation commences, an *eremacausis* of the ferment taking place, which in other words is a decomposition of its molecules, the same

action spreading to the contiguous mass, which necessarily becomes involved in the change, its products being acetic and carbonic acids ; the latter being set free on its generation, and the former remaining stationary in those fissures or depressions. The nitrogenized bodies or vegetable substances are capable of fermentation at certain temperatures, their respective juices containing saccharine matter. The albuminoid or animal substances act upon the tooth structures while in a state of putrefaction, the products being water, carbonic and acetic acids, ammonia, carburated hydrogen, and a semi-putrid substance which has an infect odour, the acetic acid being the active principle, but the relics of putrefaction are deposited upon the teeth and constitutes that species of calculi which is commonly known under the name of *green tartar*. It acts in a slow but deleterious manner upon the teeth, by absorbing small quantities at a time of the acids forming part of our food. It is the only species of that deposit which acts chemically upon the teeth.

To prevent the accumulation of food between the teeth, and in fissures or crevices, a brush corresponding in width to the length of the teeth, and of moderate hardness, the use of which should be recommended morning and evening ; in the former instance it is used for the purpose of removing the mucus deposits which adhere to the teeth during sleep, the precaution is always necessary after sleep. The brush should be used upwards and downwards, so as to reach as much as possible the mesial surfaces of the teeth. It should likewise be used both anteriorly as well as posteriorly, as far as it can reach, applying it to the labial, buccal and lingual surfaces, equally. When I say it should be of moderate hardness, I mean that its bristles should be pliable on slight pressure, for the proper use of a brush of the requisite width and stiffness may be considered as one of the numerous prophylactics against dental disorders. A very stiff brush, after its protracted use, causes an abrasion of the enamel, which, it is unnecessary to say, exposes the dentine to become diseased. The objections attending the use of a soft brush are, that the bristles do not penetrate sufficiently far to remove the foreign matter thoroughly, and by that very fact defeats its purpose. The use of the brush should not be abused of, its use morning and evening, as before stated, is all that is necessary. Some people, among the educated class, imagine that the more frequently they use it, the better. It is an error that we dentists should rectify every time such patients fall into our hands. The too frequent use of the brush involves,

(even with one of moderate stiffness,) not only an abrasion of the enamel, but also causes an insensible absorption of the alveoli.

The name of dentifrice is given to different powders and pastes, and are used, as the name implies, for the purpose of cleansing the teeth. Elixirs are also used for the same purpose, but powders are the only class of dentifrices that, in my opinion, accomplish the purpose for which they are intended. The object of a dentifrice is to remove the food accumulating around the teeth during meals, and prevent the deposition of salivary calculus to a certain degree, and for the removing of of mucus adhering to them during sleep, but especially the latter, consequently its action should be mechanical, and in order to remove the mucus deposits successfully, it requires that the various ingredients composing the dentifrice be brought to an impalpable powder, and should possess some gritty substance which is of an opposite nature to the mucus it is meant to remove. The dentifrice should contain no acidulous salt, for reasons already mentioned. Many dentifrices of a simple nature have been recommended, such as pulverized charcoal, soap, &c., but they have their objections. Charcoal is objectionable, because of its well known tendency to stain the edges of the gums after a prolonged use. Chalk, alone, should be forbidden to patients who have a tendency to the accumulation of salivary calculus, for it accumulates at the necks of the teeth, and unites with animal food and saliva to form calculus. Soap also fails to attain the object for which it is used, it being too much of the nature of mucus and cannot remove it perfectly, that very thing being most desirable. Pastes are objectionable for the same reasons. Although the mechanical action of soap is unfavorable, its chemical action is beneficial in neutralizing the acid generated by caries, and destroys the animalcules present in the mouth. Elixirs are also used largely, in this city and Province especially, their action upon the teeth is as harmless as that of water, and have the same effect; but the astringent principle they possess are beneficial to the gums, but not to the teeth; for that reason they can safely be used, but in conjunction with a powder.

I would recommend the the use of waxed floss silk or a tooth-pick to pass between the teeth, after every meal, in order to remove any particles of food which might have accumulated during mastication. A tooth-pick should be of some soft and pliable material that would not injure the enamel, the quill or the wooden tooth pick being the

best to use; any hard substances, such as metal should be avoided.

Patients should be instructed to consult the dental surgeon every six months about the state of their teeth, especially those whose idiosyncracies have a natural tendency to the accumulation of salivary calculus. In some cases patients take an interest in following the advice of the dental surgeon, and although they make use of the hygienic resources for the preservation of their teeth, they nevertheless require to be treated pathologically by the dentist, the teeth being unable to resist disease, all depending upon the state of their health.

Sugars are divided into two classes, viz.: the *true sugars* or those capable of fermentation, and the *imperfect sugars* or those incapable of fermentation. Of the former class we have the hard and liquid sugars, they are classified as follows, by Dr. Dunglison:

Species.

Varieties.

- 1.—Hard sugar of the cane, maple, beet, chesnut, &c.
- 2.—Liquid sugar, sugar of malt, of the sweet potato, molasses honey, &c.
- 3.—Hard sugar of the grape, ripe fruits, starch, &c.
- 4.—Hard sugar of the mushroom.

Those sugars of the latter class are, according to the same author viz.:

Species.

Varieties.

- 1.....Manna.
- 2.....Sugar of milk.
- 3.....Sugar of jelly or glue, (gelatin).
- 4.....Liquorice
- 5.....Picromel.

Sugars of the former class themselves do not have an injurious effect upon the teeth, but like the vegetable and animal food, the products of their fermentation causing the evil results. Cane or muscovado and maple sugars in their natural state, that is, the way in which they are sold in commerce, are not injurious to the teeth although they are capable of acetous fermentation, because the former is of a granulous nature and does not chrystallize on being masticated, and the latter is incapable of rechrystallization under the same circumstances; but when used in the manufacture of confectionary they chrystallize, their nature are thereby changed, and on mastication lodge in the defective parts of the teeth and cause mischief by fermentation. Particles of bread or substances of the same character saturated with molasses or other liquid sugars, also lodge during mastication in defective parts of the grinding surfaces of molars and bicuspsids, and between closely set teeth, and act by fermentation.

Confectionary may be divided into three distinct classes, viz.: First, that coloured with certain mineral substance. Secondly, that coloured with vegetable substances. Thirdly, that which is colourless, or the natural colour of the sugar after it has been boiled.

[To be Continued.]

## THE APPLICATION OF HOMŒOPATHY TO DENTAL SURGERY.

BY THOMAS NICHOL, M.D., BELLEVILLE, ONTARIO.

NO. I.—ARNICA MONTANA.

I purpose writing a series of papers on the applications of Homœopathy to Dental Surgery, making them as concise and practical as possible. The resources of all schools of medicine are open to the dental surgeon, and I am satisfied that to him homœopathy offers many valuable remedies.

*Arnica montana* was a popular remedy for wounds and bruises for a long time, when, about two centuries and a half ago, a Belgian physician named Fehrsins wrote a treatise showing that it was a specific remedy for sanguineous effusions, ecchymoses, sugillations, etc. A large number of Continental physicians acted on these suggestions, and the remedy was soon in extensive use. But, in the course of time, *arnica* fell into almost complete disuse till it was revived by Dr. Samuel Hahnemann, who assigned it the chief place among external remedies.

This remedy is peculiarly adapted to sanguine plethoric persons, with lively complexions and disposed to cerebral congestions. On the other hand, it has but feeble action on anemic persons of feeble muscular powers. Hence it is peculiarly adapted to the inflammatory stage of the diseases in which it is used. *Arnica* has special action on the muscles, tendons and fasciæ; on the capillaries and on the *vasa vasorum* of the arteries and veins; on the lymphatic system; on the cellular and dermoid tissues; and, lastly, on the nervous system. Its action on the muscular system is very evident, especially in the almost protean forms of myalgia, but its action on the capillaries is of more moment to the dental surgeon. It principally affects the arteries of secretion, hence its power in hemorrhages, extravasations of blood, and effusions of serum. It is emphatically an *absorbent* remedy. From its action on the venous capillaries and absorbents it causes the absorption of blood extravasated into the cellular tissue. Its influence upon the lymphatics is much less than upon the venous capillaries. In its action on the nervous system, it principally affects the motor nerves, though its action on the nerves of sensation is distinctly marked.

Dr. Alphonse Veste remarks:—"The sphere of *arnica* comprises,

then, all *traumatic lesions*, (*contusions, cut and torn wounds*,) with their immediate consequences, (*internal or external hemorrhages, fractures, luxations, sprains, traumatic fever, syncope, tetanus, paralysis, pneumonia, hepatitis, etc.*) or their remote consequences, (*partial emaciation, neuralgia, intermittent fevers, encysted tumors, etc.*) An infusion or diluted tincture of arnica forms an excellent soothing wash after the extraction of teeth, and it is also useful in arresting the bleeding that sometimes follows. Hahnemann says, "Even in the most dangerous wounds by balls and blunt instruments, arnica is very efficacious; it is also eminently useful against the pain attending the pulling out of teeth, or other surgical operations, in which sensitive parts have been violently strained—such operations as reductions of joints, etc." Dr. James W. White, in his admirable Dental Materia Medica, says, that "the special use of this remedy is to prevent suppuration and ecchymosis in fresh bruises and ragged wounds," but calendula is much better adapted to ragged wounds and to prevent suppuration. It is likewise specific in the fever that often follows wounds and operations, though sometimes aconite is more suitable to fever following operations. Arnica is homœopathic, according to Hartung, after the extraction of teeth; it stops bleeding quickly, and also sometimes cures toothache with throbbing, pressing pain, with sensation as if the teeth were too long, with congestion of the gums, worse on touching, and hard swelling of the cheeks. It is also of use in arthritic toothache when the pains are stitching and tearing and the face burns and looks swollen. Ruckert reports the following case:—"A lady was suffering terribly from toothache, heat and swelling of the gums, and drawing, stitching pain in the teeth of the right superior maxillary bone, extending up to the ear; face red, burning hot, with swelling of the cheek; worse in the air and on applying heat. She had two teeth plugged a few days ago. Arnica 30th gave almost instantaneous relief."

This remedy has been used in all dilutions from the full strength recommended by Dr. White to the 30th dilution. For external use I place a teaspoonful of the tincture in half a teacupful of pure water, while for internal use I some times prescribe a similar solution, but oftener the third decimal dilution or a trituration of it. Dr. Constantine Hering says, in his sententious way, that "no arnica should be used except such as is made from the root," an opinion in which I entirely coincide.

## FISTULOUS OPENING FROM A DEVITALIZED TOOTH.

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BY A. C. COGSWELL, D.D.S.

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A young lady, aged 18, called at our office a few months since, with a fistulous opening on the left side of her chin, below the second inferior bicuspid tooth, which had been discharging, and causing pain and annoyance for nearly three months.

The history of the case was this. When trouble first commenced by gradual enlargement and constant pain, she called in her family physician, who, in diagnosing pronounced it a tumor, prescribed local applications, and painted the surface with iodine. This treatment was continued until she was obliged, by the persuasion of her physician, to have an opening made in the outside, so as to give vent to the laudable pus formed, which gave some relief and removed that intense throbbing pain so general in such cases. After repeated visits from her physician the discharge seemed rather to increase than otherwise, pain not so severe as at first, but from confinement to the house, and being generally of a weak anæmic constitution, she began to grow quite feeble, and, with loss of appetite and want of exercise, she confined herself to her home, and as the discharge became so disagreeable and offensive, her pride forbade her being seen only by those in her own family.

After every conceivable remedy was resorted to, to prevent the discharge from the face, by her physician, she was advised by some of her family to consult a dentist, but to this suggestion, when mentioned to her physician, he thought there was no need, as he felt convinced the trouble could not arise from the teeth in any way, as the tooth that formerly occupied the now vacant space had apparently been removed, although the patient had no recollection of ever having a tooth removed. but had lost several by decay. Not satisfied with this the young lady called some days after, and in order to convince her respecting what might be the cause of all the above trouble, I carefully examined by means of a probe, and found at once a large portion of the root of the bicuspid tooth still remaining in the process. This was removed after some little difficulty, as it was deeply imbedded far down, and in removal there came away with it a large portion of the peridental sac, which is often seen in the removal of such teeth, but in this case it was unusually large, in size quite like a large bean.

This was sufficient to prove the cause of all the trouble, which resulted in a cure.

The parts were carefully syringed several times during the following week, with tepid water and tannin, from the inside through the opening made by the removal of the root. The patient rapidly recovered, but the scar *still* remains, which might have been prevented had there been a more careful examination on the part of the physician, or had he advised the patient to consult one of the dental profession earlier. These cases should *not occur*, especially when the advice of those who make dentistry a specialty can be obtained, and as the fair sex have not the alternative, like some gentlemen, of covering their faces with *beard*, but requiring in this world at least a *scarless* face if not a handsome one, as the latter is often their passport in society.

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## PROCEEDINGS OF SOCIETIES.

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### ANNUAL MEETING OF THE ONTARIO DENTAL SOCIETY.

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The Society met in Halley's Hall, corner of King and Bay streets, Toronto, June 7th, at 2 p.m.

The President, Mr. C. S. Chittenden, in the chair.

The minutes of last meeting were read and confirmed.

The roll was then called, when about thirty answered to their names.

Mr. N. Pearson, of Newmarket; Mr. C. H. Bosanko, of Barrie; and Mr. J. F. Wilkie, of Clinton, were elected members of the Society, and signed the Constitution.

The election of officers being the next in the order of business, Mr. G. V. N. Relyea, of Belleville, was elected President; Mr. John Leggo, of Ottawa, Vice President; Mr. W. H. Branscombe, Secretary; and Mr. John Bowes, Treasurer.

The retiring Preasident read a short address on retiring, after which the newly elected officers were conducted to their seats, each making a few appropriate remarks.

On motion, Mr. Chittenden's address was ordered to be printed

The President appointed Messrs. Lennox, Sabine and Willmott a committee to prepare a programme of proceedings for the session.

On motion, it was decided to hold the next meeting of the Society

in Toronto, in July 1871, at the time fixed by law for the meeting of the Board.

A discussion then followed on the subject of dental fees, in which Messrs. Leggo, Chittenden, Clements, J. W. Elliot, Wells, Adams, G. L. Elliot and Burns took part, and each and all urged the necessity of elevating our tariff of fees.

Mr. Kahn, in reply to the remark that it would be impossible for dentists in small towns to obtain as high fees as those in large towns and cities, said, "that he thought the dentists of Toronto had done more to lower the standard of fees than the country dentists, and gave an instance, in which a person had obtained a set of teeth for less than half the fee which is charged in the locality from which he came."

Mr. Chittenden moved, seconded by T. J. Jones, That a petition be presented to Parliament at its next session, praying for amendments to the Act respecting dentistry, and that the President appoint a committee to draw up such amendments, said committee to report to this meeting before the final adjournment. Carried.

The President appointed Messrs. Leggo, J. W. Elliot and L. Clements.

As the election of a new Board of Directors and Examiners of the Royal College of Dental Surgeons was to take place at seven in the evening, it was moved that the meeting do now adjourn till to-morrow morning at 9 o'clock. Carried.

#### SECOND DAY.

Wednesday, June 8th, 1870.

The Society was called to order at half-past nine a. m. Minutes were read and confirmed.

Mr. Willmott read an essay "On Notes of some Experiments in Vulcanizing India Rubber," after which a discussion followed.

Mr. Chittenden preferred black rubber for many cases on account of its greater strength; vulcanized it at the usual temperature. Uses a Whitney Vulcanizer with the mercurial bath thermometer.

Mr. McLaren, in connection with his brother, uses black rubber very extensively for artificial limbs, but vulcanizes it at  $260^{\circ}$  for thirty-six hours. Thinks the rubber is better when vulcanized at a low heat, and for a longer time.

Mr. Bowes has found that it takes a much higher heat to harden black than red rubber.

Mr. Willmott thinks we are all running the heat too high, and not giving time enough to obtain the best results ; that the rubber itself is as good as any we have ever had, but that, by steaming it at such high temperatures, we do not get as strong plates as formerly.

Mr. Bowes disagrees with Mr. Willmott in regard to the strength of the rubber now in the market, as compared with that sold when we first commenced using this substance. Thinks that if we could get the same quality of rubber now that the old Rubber Company used to make, our sets of teeth would be better than they are.

Dr. Wells wished to ask whether there is greater pressure in the heater with a large, than a small quantity of water.

Mr. Adams thinks that a small quantity of water, only, is necessary.

Dr. Stone has found that where two flasks are steamed at the same time, the upper one was not hardened as much as the lower one. Thinks that both flasks should be covered with water, or neither should. Does not consider the thermometer a perfect indicator of the heat in the interior of the heater.

Dr. Rowe has always found thermometers reliable, and believes all are carefully tested before being offered for sale.

Mr. Wilkie has found that the pressure on the heater is very much greater when it contains a large quantity of water than when but little is used, and that the flask at the bottom of the vulcanizer is harder than the one at the top, when two cases are vulcanized at the same time.

Mr. Branscombe said he had not met with the difficulties which had been described by those who had preceded him. He vulcanized at 345 ° for eighteen minutes.

Mr. Willmott was positive that the sudden cooling of the flasks after vulcanizing injured the quality of the rubber.

Mr. Trotter vulcanizes at 360 ° and prefers it.

At the close of the discussion a vote of thanks was given to Mr. Willmott for his essay, and a request was made to have it published.

On motion, Dr. Nelles read an essay on Dental Hygiene, which elicited a lengthy discussion.

Mr. Chittenden said he could not agree with Dr. Nelles in regard to two or three of the assertions made in his paper. 1st. In his practice he has found that the German population, as a class, have much worse teeth than the Americans, a fact, which his intercourse with the German people led him to doubt somewhat about the

teeth being injured by "the pampering of the appetite" to as great an extent as Dr. Nelles seems to think. 2nd. He cannot believe that the teeth are injured to an appreciable degree by indulgence in thoroughly ripe fruits. It is possible that badly formed teeth may be affected somewhat, but he certainly would not advise his patients to deprive themselves of the luxury of eating such fruits as are produced in the climate in which they were reared, on account of their having any deleterious effect on their teeth.

Mr. Wood agreed with Mr. Chittenden as to the eating of fruits. He had thought much and read much on the subject of the decay of the teeth, and the best means of preventing it, but was not fully satisfied as to the cause or causes. Reports show that the teeth of the full-blooded blacks of the Southern States are good ; that those of the whites are not as good ; while the teeth of those of mixed blood are, as a rule, decidedly bad. It was, he thought, possible that the crossing of the blood, or rather the mixing together of so many nationalities in this country, was one of the causes of the decay of the teeth, or rather of their being formed of materials not sufficiently solid to enable them to ward off decay. He had heard it positively asserted that the crossing of the breeds of cattle deteriorates the race for two or three generations, and he was inclined to believe that the bad teeth of the people of this country arise from this and the fact that the teeth are actually starved for want of lime.

Mr. Willmott said, I have, in connection with my practice as a dentist, carried on the drug business, and I have noticed that a very large part of the community have purchased feeding bottles for their infants. I feel sure that in the section in which I live a large portion of the infants are not raised on a mother's milk, but on food composed to a great extent of starch, and I have no doubt the same practice prevails in other communities. I believe that this manner of feeding children is one reason for their poor teeth.

Mr. Relyea thinks that the diet of infants has a great deal to do with the future health of the teeth as well as of the body.

Remarks were made by Messrs. Bosanko, Wilkie, Willmott and Adams, on the use of phosphates during gestation and lactation, and urging all to prescribe them to their patients.

A vote of thanks was passed to Dr. Nelles for his valuable paper.

On motion, the President appointed Messrs. Lennox, Pentland and Sabine a committee to make arrangements for the reading of essays at the next annual meeting.

Messrs. Neelands, Pentland and Clements were appointed as a Committee of Finance; and Messrs. Snider, Adams and Myers were named as local Committee, to make the necessary arrangements for the next annual meeting. Adjourned.

#### AFTERNOON SESSION.

The chair was taken at 2:30 p.m.

The subject for discussion being "The different kinds of gold used for filling teeth." The President called on Mr. Chittenden to open the subject.

Mr. Chittenden said he considered all the different preparations of gold to be valuable. Some could be used in nearly every tooth that one meets with, while others could only be employed in particular cases. He always intends to have a small quantity of each kind on hand, so that he can use it when he requires it. He has used a good deal of the different plastic golds and likes them all, in what he considers their proper places, viz.: in the bottom of the cavity, or at least where the fluids of the mouth cannot reach them. He would not say that a perfect filling cannot be made entirely of plastic gold but in his practice he has found it exceedingly difficult to condense it so thoroughly that the fluids of the mouth will not disintegrate it. Prefers No. 3 foil for general use, but would not be willing to be restricted to any one No. Has used Nos. 10, 20, 40, 60 and 120, and likes them all. Uses them for facing fillings, and finds them most valuable adjuncts to other preparations of gold. He had never attempted to make the body of a filling of these high numbers yet, as he has only been using them for a short time, but is feeling his way with them to see what can be done. Almost invariable commences a filling with soft foil, or one of the plastic golds, and finishes off with adhesive foil, and suits the number of the foil to the case in hand.

Mr. Adams. Do you think that the surface of a filling, made with heavy foil, will wear as well as one made of the lower numbers?

Mr. Chittenden. I do.

Mr. Adams. How do you anneal your foil?

Mr. Chittenden. I prefer passing it through the flame. I do not say that that is the *best* way of annealing, but it suits me better than the annealing pan.

Mr. Adams. Do you use the hand or spring mallet?

M. Chittenden. Formerly, I used the hand mallet exclusively,

but latterly, I have learned to use the automatic so well that I prefer it in most cases. I use two now, but intend to get a third one soon. I think, *now*, (I may change my opinion if I see reason for doing so,) that with three automatic mallets a dentist can do his condensing better than an assistant can do it for him.

Mr. Sabine thought that the alcohol would require to be very pure to enable one to use it for annealing the foil.

Mr. Relyea said he uses a substance called "taggs" for annealing. Uses Velleau's gold foil, and finishes with Kearsing's fibrous gold.

The President called on Mr. Leggo, who came forward and read a very instructive paper entitled "Common Sense," for which he received a hearty vote of thanks. On motion, it was ordered to be printed. After which a short discussion ensued.

Mr. Callender thought that operative dentistry ought to be separated from the mechanical branch, and that we should use our endeavors to bring about such a separation at as early a day as possible. In order to bring about this desirable end, we must do away with all those petty feelings of enmity existing between those practicing in the same vicinity. Of course, it can not be done at once. At the present time every man is working for himself, but he trusted that those who come after us will be in advance of us, and will be prepared and willing to adopt many reforms which we can now see ought to be adopted.

Mr. Wood fully agreed with Mr. Callender, and thinks that a separation of the two branches of the profession may be effected in towns where there are a number of dentists, and that each would succeed better than at present.

Mr. Willmott said he thought we were not sufficiently careful to learn whether those who come to us as students are qualified to become dentists. He thought that many could never learn the business thoroughly.

Mr. Callender thought that some system should be adopted, by which those who are incapable, by nature, from learning dentistry should be prohibited from making the attempt to do so.

Mr. Adams agreed with Mr. Callender.

Mr. Chittenden referred to the lack of even an English education on the part of a large proportion of those who had passed their examination, and urged, for the credit of the profession, that some standard of educational qualification should be fixed, by which all who

wish to study dentistry must be tried before they be allowed to article themselves.

Mr. Callender hoped that a committee would be appointed at once to take the matter into consideration.

The Finance Committee reported a balance of \$7.00 in hand, after paying all indebtedness. Adjourned.

#### EVENING SESSION.

The closing session opened with an essay on "Dental Education," by Mr. C. P. Lennox, which contained matter with the right ring in it, and brought nearly every one present to his feet, all the speakers agreeing entirely with the writer. A vote of thanks was given to Mr. Lennox, and on motion it was ordered to be printed.

An hour was spent in conversation on subjects connected with dentistry, when the Society adjourned for another year.

After the adjournment a few friends of Mr. O'Donnell presented him a handsome meerschaum pipe, as a mark of the esteem in which he is held by them. The presentation was made by Mr. Lennox in a very pleasing speech. Mr. O'Donnell, on receiving the gifts, made a suitable reply.

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#### THE ELECTION OF THE NEW COLLEGE BOARD.

In accordance with the statute to that effect, the licentiates of the Province met at St. Lawrence Hall, Toronto, on Tuesday the 7th inst., for the purpose of electing a new Board of Directors of the Dental College for the ensuing two years.

The attendance was not as large as was expected, there being only fifty-two present who were entitled to vote.

Mr. O'Donnell, the Secretary, on behalf of the retiring Board, read a short report of the proceedings of the Board for the last two years.

A little time was taken up in deciding in what way the vote should be taken, some being in favor of an open vote, but a majority were in favor of the ballot.

Before the voting commenced, Mr. Chittenden rose and stated that he could not undertake the duties of a member of the Board during this term, and would therefore urge his friends to vote for some one else.

Messrs. Bogart, Lalonde, Meacham and Elliot also declined.

The ballots were then circulated, and resulted in the election of Messrs. Leggo, Day, Relyea, Wood, Rowe, O'Donnell, Callender, Willmott, Bowes, Nelles, Stone, and Wells.

The new Board met and elected Mr. Wood, President ; Mr. O'Donnell, Secretary ; Mr. Stone, Treasurer ; and Mr. Willmott, Registrar.

## SELECTED ARTICLES.

### SOFT GOLD FOIL.

BY EDWARD J. KING, DECATUR, MICH.

Years ago, in common with the rest of the profession, I used soft foil, and the softer I could get it the better I liked it. Presently there came a whisper, softly at first, but growing louder and louder by degrees, that a great discovery had been made. Hard foil was the thing. I got some of it, of course, and I worked and worked until the perspiration rolled in drops from my forehead in the vain endeavor to make a filling of it. I then procured all the different patterns of tongue-holders and cheek-distenders, duct-compressors and saliva-pumps, rubber-dam and boiled cotton, flax, spunk, bibulous paper, and napkins for stuffing the oral cavity. There was a change. I cried eureka ! I could hold myself and my patient while I introduced ten or twelve leaves of Watt's best. In vain was it for my patient to strangle and struggle, or make abortive efforts to order me to stop and extract the tooth. I had him. I kept on in supreme indifference, conscious that I was engaged in a great work, indorsed as it was by the fathers in the profession. I have had seven or eight years of this glorious work, good for the teeth, and necessarily so for the patient. I have just commenced using a little *common sense* with my gold foil.

I see no reason why I should be four hours filling a cavity when I can do it just as well in two ; and before anybody tells me I can't do it as well, I want him to give the common-sense method a trial. There are a few cavities, owing to form, position, etc., to which it is not applicable, but to the majority it is. Make one or two retaining points and fill with adhesive gold, putting on a piece or two more after they are full ; warm one side of a soft foil pellet, and press it home ; then fill the remainder of the cavity with large pellets of soft foil without warming, condensing as much as possible. With wedge-

pointed instrument form retaining points in the body of the gold, and fill them with adhesive foil, and so proceed until the wedge refuses to enter again. Doubts may arise in the minds of some as to the relative durability of a filling made in this way, because it cannot be so absolutely solid as when all adhesive foil is used. I will state it as my humble opinion, that we are in the habit of making fillings too solid for any good purpose.—*Dental Cosmos*.

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### CLEFT PALATE.

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#### STAPHYLOGRAPHY—URANOPLASTY.

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BY J. HENRY CARSTENS.

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In January, Prof. McGraw operated before the class of the Detroit Medical College, for cleft palate, according to Langenbeck's method. The patient, a young man, 20 years of age, suffered from congenital fissure of the hard and soft palate. The fissure of the hard palate extended through the palate bone, and measured three-fourths of an inch in length and three-fourths of an at its greatest breadth.

The professor called the attention of the class to the great vascularity of the parts, stating that severe lacerated wounds about the head would heal, when in other parts of the body such injuries would seem almost hopeless; and that this very vascularity, though the cause of great hemorrhage sometimes in operative procedures, made plastic operations more successful in this part of the body than elsewhere.

Professor McGraw first performed the operation of uranoplasty according to the method described in the following translation of Langenbeck's article, and then that of staphyloraphy. Between the two operations there was an interval of one week. The patient was kept perfectly quiet for some days, and was not allowed to speak nor to eat solid food. This is absolutely necessary to the success of the operation. Two weeks after the last operation the young man left the hospital. Union had had taken place by first intention, and only a very small opening, one line in diameter, remained at the anterior angle. It was noticed by all who heard him speak before and after the operation, that his articulation had already somewhat improved.

Thinking it of interest, perhaps, to the readers of the *Review*, I take this occasion to write a few words about this most difficult of

surgical operations; an operation most trying to the surgeon—one which requires from one to two hours to complete—and which is most painful to the patient, on account of its being impossible to give an anæsthetic.

Staphyloraphy, an operation to close the fissure of the soft palate, has been performed for a number of years, with more or less success, and is too well known to require description.

Ph. J. Roux was the first who operated successfully for acquired defect of the hard palate, in 1831, and established a distinct operation in surgery by transplanting flaps of mucous membrane. (*Quarante années de Pratique Chirurg.* 1854.) The plan originally practiced by Roux has been variously modified by Warren, Field, Dieffenbach, Baizeau, and others. It seems strange that the success of Roux (recovery of three of his four patients) should not have removed the unfavorable impression of the French surgeons of the last twenty years, in regard to this operation.

Krimer operated successfully for congenital cleft of the hard palate, it is claimed, in 1824, causing the greatest astonishment in the surgical world. Velpeau's trial in 1839 was unsuccessful, although Pancoast, of Philadelphia, in 1840, lessened a syphilitic perforation one half. (*Med. Ex. and Rec.* 1844.)

To Langenbeck, of Berlin, is undoubtedly due the merit of establishing *uranoplasty* as a distinct surgical operation. Of his description I have made the following translation :

“Three different operative processes may be made use of. *First*, the edges of the fissure in the hard palate may be horizontal. In this case, by an incision deep into the bone on each side, close to the teeth, commencing at the incisors and diverging to the velum pendulum palati, I form two muco-periosteal flaps, which are, by means of an elevator and scalpel, loosened and stripped off the bone, by commencing at the alveolar process on each side, and cutting inwards. These muco-periosteal flaps, which are to be glided towards the median line, represent the whole involucrum palati duri, and the bony palate is thus completely denuded of periosteum. Each of these flaps, however, remains attached by a strip three or four lines wide, behind the incisor teeth (anterior nutrient bridge), and at the velum (posterior nutrient bridge). These incisions are nearly the same as those made by Dieffenbach, Field, and Baizeau for the construction of their flaps of mucous membrane. Should the cleft in the hard palate be incomplete, these incisions are not to be carried

farther forward than is necessary to secure the movability of the flaps, that the same may be secured in the median line.

*Second*—If one edge of the cleft in the hard palate is horizontal, and the other edge rises vertically on the vomer and into the nasal cavity, the horizontal half may be operated on as described in No. 1; but the other half requires a different operation. We must then make an incision in the muco-periosteal covering, where it joins the mucous membrane of the nose, viz.: at the boundary line of the vertically rising palatine process with the vomer, the whole length of the cleft, from the velum forward to the teeth, and then we must loosen the whole covering, from the commencement of the incision to the inner side of the alveolar process. During this very tiresome operation the operator sits before the widely opened mouth of the patient (whose head is at the same time pressed backward), and uses the instruments with the right hand, if the right half the palate is the perpendicular; with the left hand if the opposite is the case. The covering of the palate which has been separated in this manner, then takes a horizontal position, forming a kind of curtain, which is attached externally the whole length of the alveolar process to the gums, and behind to the velum, and can now be accurately united with the flap of the opposite side.

*Third*—If the edges of the cleft of both sides rise vertical, with great width of fissure, the operation is the same on both sides, as described in No. 2. To avoid having the two flaps, which are only attached anteriorly to the gums, and posteriorly to the velum pendulum palati, follow the law of gravitation, and when taking the horizontal position, sink to deep, it is advisable to attach the same at several points to the vomer. To accomplish this, the whole under surface of the vomer must be denuded of a very thin slice of mucous membrane. The stitches which shall fix the curtain-like flaps to the vomer, are brought, after passing through the left flap, through the remaining submucous fascia and periosteum of the vomer, and then through the right flap. If the soft covering of the vomer does not offer sufficient support for the stitches, and it is feared the same may tear, one of the sutures, the middle, must pass through the bony substance of the vomer itself, by puncturing the bony vertical septum of the nose with the needle, or in adults with a stronger instrument. Three such sutures ought to be enough in all cases, although generally one is sufficient. By tying the sutures, not only the flaps are brought in apposition but also their denuded surfaces are brought

in contact with the denuded surface of the vomer, effectually preventing the flaps from sinking too low. If the vomer occupies a very high position it will be impossible to bring the denuded surfaces together ; still, it is necessary that the vomer be the fixing point of the flaps. Instead of the last described proceeding, the operation No. 1 may be used ; but in this case we can not expect to close the anterior angle of the cleft, which will require a second operation.—*Detroit Review of Medicine and Pnarmacy.*

(To be Continued.)

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## WEDGING FOR APPROXIMAL CAVITIES IN MOLAR AND BICUSPID TEETH.

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BY H. N. CASE, LITTLE ROCK, ARK.

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Seeing the question of opening approximal cavities in molar and bicuspid teeth so often discussed in the dental journals, I have thought that perhaps my mode of procedure in these cases might not be uninteresting to your readers. I have not used the file for separating teeth for many years ; but open for *all* approximal cavities with the wedge.

One would suppose at first thought that molar teeth could not be opened in this way, but I have very rarely met with teeth that cannot be opened just as wide as is necessary, even as far back as second molars and dentes sapientiæ. I use hickory, and put the wedge in no tighter than I can push it with the hand. I have wedged teeth by the slow process for ten years, and without the slightest ill effects, except in a single case, and even this one I never believed to be directly chargeable to wedging. The case in question was that of a young lady, aged eighteen years, of a scrofulous diathesis, residing in a swampy, malarious district.

She had no trouble with the teeth until more than a year after the operation was performed. Then the teeth ached and caused the face to swell. I give this rather vague and indefinite result, as this was all I could learn from her friends, never having seen the patient since the operation was performed. I am inclined to think that, in cases where slow wedging have produced bad results, it was because rubber was used. The wedge is changed every other day, unless there is too much soreness ; then twice a week will be sufficient. I think perhaps the success of slow wedging depends a great deal on avoiding all undue soreness. The best way to cut the wedge off

smoothly, so as to be comfortable to the patient, is with the nail blade of a pocket knife, kept for that purpose very sharp and ground thin; rest the thumb upon the end of the tooth, and the file portion of the blade will protect the lip and thumb from being wounded.

Now I am aware that the great objection to this mode will be that it is too much trouble. If there is any one thing which, more than another, results in loss of teeth to the patient, and reputation and practice to the operator, it is this unwillingness to bestow the necessary amount of time and labor on operations.

The great object with many is to cheapen dentistry, and turn off an immense quantity of work; while the true interest of the practitioner is to exalt the standard of excellence. It appears to be the prevailing idea with most dentists that, in order to compete successfully with a neighbor, one must work as cheap or cheaper; but my word for it, no dentist can compete with that operator who performs none but superior operations and then charges a good price for them. These things are—when properly done—done for a lifetime, and although the patient may even grumble at the time, time alone will vindicate your price and make him your friend and advocate. This mode of opening bicuspid and molars gives the operator more perfect access to the cavity, both to prepare and fill it properly. When an approximal cavity is cut into with the file, chisel, or drill, it is almost impossible to round and smooth the edges of the cavity properly, and utterly impossible to condense and polish the filling well down to the neck of the tooth, and then the food crowding down upon the gums through the space that is left between the teeth will prove a serious annoyance for a lifetime; while, if the teeth are opened with the wedge, the operator has room to prepare the cavity and condense the filling properly, and finish it nicely, and then the teeth will close up again *perfectly* natural.

Many will pass this by, thinking that it is a “hobby” of mine, but I think that no dentist who ever gives it a thorough trial will ever abandon it. It renders comparatively easy a class of operations which are well known to be the most difficult ever met with.—*Dental Cosmos*.

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DR. P. H. GARRITSON narrates in the *Medical Archives* the case of a carpenter, aged forty two, who dislocated his humerus downward into the axilla by imprudently sneezing while combing his hair. We have frequently heard of severe injuries inducing a state of *coma*, but never of the reversed order of affairs.

## ARE THE MINERAL ACIDS FORMED IN THE MOUTH ?

BY E. C. CHASE.

I propose to take the affirmative of the above proposition, and I shall attempt to show that the powerful mineral acids, sulphuric, nitric and hydrochloric are formed in the mouth under certain circumstances ; namely, when the food is allowed to remain around, upon and between the teeth day after day. They then are constantly being formed slowly, and in small quantities, to be sure. It is conceded by all who have given the subject any thought, I believe, that *organic* acids, such as *lactic*, *acetic*, etc., exist in the mouth, under certain conditions, in sufficient quantities to be detected. This is a well known fact and will not be denied, and it is not probable that they alone are the only acids which cause such disastrous results to the dental organs. It is true, the only positive evidence we have that nitric and sulphuric acids are ever present in the oral cavity, are the effects which they produce upon the teeth ; but as for hydrochloric acid it has often been detected by reagents.

It seems to be a pretty well settled fact that dental decay is due to the action of certain *acids*, and if we knew to what acid or acids this action was due it would be an easy matter to apply the proper remedies.

I will now proceed to consider the action and formation of the different acids, and see if under any circumstances they could possibly be formed in the mouth. I will commence with

**SULPHURIC ACID.**  $H_2SO_4$ . As its formula indicates, it is composed by weight of two parts of hydrogen, sixty-four of oxygen and thirty-two of sulphur. A great number of the nitrogenous compounds, as albumen, caseine, gluten, &c., besides containing carbon, oxygen, hydrogen and nitrogen in their composition, have a trace of sulphur. If for example a fibre of meat is caught between the teeth and allowed to remain there a sufficient length of time, it will undergo decomposition, part of its hydrogen uniting with part of the nitrogen, forming ammonia,  $NH_3$ , its carbon uniting with part of oxygen forming carbonic acid  $CO_2$ , and the sulphur combining with the remaining hydrogen, in contact with the oxygen of the air, is decomposed ; the hydrogen uniting with the oxygen, forming water, and the sulphur set free. This sulphur being in the nascent state and having a great affinity for oxygen, is oxidized, and the result is

*sulphurous acid*  $\text{SO}_2$ , which is converted rapidly into *sulphuric acid* in the presence of the water of the saliva; thus  $\text{SO}_2 + 2\text{H}_2\text{O} = \text{H}_2\text{SO}_4 + 2\text{H}$ . The acid thus formed immediately acts upon the carbonate of lime, decomposing it, and charring the animal portion. This acid can neither decompose the phosphate of lime nor dissolve it. Therefore the latter, with the animal portion of the tooth, acts as a barrier, protecting the portion of tooth beneath it. It is probable that the "black variety" of decay, where but little of the tooth substance has been removed and the disintegrated portion is tough and cuts like leather, is caused by the slow but constant action of sulphuric acid. The acid blackens the organic or animal portion of a tooth by its great affinity for water, therefore it causes a portion of the oxygen and hydrogen of the organic substances to unite, *forming water*, leaving an undue portion of carbon, which gives it its black or brown color. Owing to the small amount of sulphur which is present in the mouth under the most favorable circumstances, it necessarily follows that but a small quantity of sulphuric acid would be formed, and this immediately acting upon the teeth or some ingredient of the saliva, may account for its never being discovered in the mouth in an uncombined state.

**NITRIC ACID.**—Symbol  $\text{HNO}_3$ , is, as its symbol indicates, composed by weight of one part hydrogen, forty-eight parts of oxygen and fourteen parts of nitrogen; in one hundred parts we have, hydrogen 1.59—, oxygen 77.19 +, nitrogen 22.22 +.

It is commonly prepared by the action of sulphuric acid upon potassium nitrate; the reaction is as follows:  $\text{KNO}_3 + \text{H}_2\text{SO}_4 = \text{KHSO}_4 + \text{HNO}_3$ . Nitric acid is characterized by its great affinity for bases and for its property of furnishing oxygen in its nascent state to oxidizable substances. It acts energetically upon a tooth, decomposing the carbonate of lime, setting carbonic acid free and forming the nitrate of lime and water, thus:  $\text{CaO}_3\text{C} + 2\text{HNO}_3 = \text{Ca}_2\text{NO}_3 + \text{CO}_2 + \text{H}_2\text{O}$ . It cannot decompose the phosphate of lime, but readily dissolves it. It decomposes and destroys the animal portion of the tooth.

Thus we see that nitric acid removes each constituent of the tooth as soon as it comes in contact with it, either by decomposing it or dissolving it. This powerful acid is sometimes administered as a medicine, as is also sulphuric and hydrochloric; but probably not sufficiently often to account for its effects, which are constantly seen upon the teeth according to many practitioners. Watt says "It is

the principal agent in the production of the 'white decay.'” By the putrefactive decomposition of any nitrogenous substance ammonia is evolved. And although nitrogen has a very feeble affinity for oxygen, yet under certain circumstances it combines with it, and forms several different compounds; and is it not reasonable to suppose that when some albuminous substance is undergoing decomposition in the mouth some of the conditions are present for the formation of some oxide of nitrogen? Although this has never been demonstrated, yet I think it very probable, for hundreds of chemical combinations and decompositions are taking place throughout the organism every hour that could not take place outside of the body except under entirely different circumstances; for instance, hydrochloric acid is found in the gastric juice; this must evidently have been formed in the body by the decomposition of some chloride, the chloride of sodium probably. Now, to generate hydrochloric acid outside of the body by the decomposition of this salt requires a greater heat than that of the body. Suppose that an albuminous substance is decomposed and *nitric oxide*  $\text{NO}$ , is formed, which is not improbable; this coming in contact with the oxygen in the saliva is immediately converted into *nitric trioxide*  $\text{N}^2\text{O}^3$ , and this in the presence of the water in the saliva is decomposed into nitric oxide and *nitric acid*. The reaction is as follows:  $3\text{N}^2\text{O}^3 + \text{H}_2\text{O} = 2\text{HNO}^3 + 4\text{NO}$ . Thus by the decomposition of a particle of meat or a portion of the gluten of flour, or of epithelium we may and probably do have formed one of the *strongest acids*. Watt says that the ammonia which is generated “exposed to the action of oxygen is *always* decomposed, an oxide of nitrogen being formed, and of course *nitric acid* is the result.”

**Hydrochloric Acid.** Symbol  $\text{HCl}$ , is, as its name indicates, composed of hydrogen and chlorine. The action of this acid dilute upon the teeth is very energetic. It decomposes the carbonate of lime forming the chloride of calcium and liberating the carbonic acid; the hydrogen of the acid unites with part of the oxygen, forming water, thus  $\text{CaO}^3\text{C} + 2\text{HCl} = \text{CaCl}^2 + \text{H}^2\text{OCO}^2$ . The phosphate of lime is not decomposed but is very soluble in the hydrochloric acid and in this way is removed from the tooth. If the acid is strong some of the organic portion of the tooth is also acted upon. The action of the acid upon the teeth may account for that variety of decay where the inorganic portion is removed and the animal portion remains.

Now the question arises, how is this acid formed in the mouth? As I said before, it has frequently been detected by means of

reagents. The chlorides of sodium and potassium are always present in the saliva, and it is undoubtedly formed by the decomposition of one of these salts, its chlorine combining with the hydrogen of the water; and thus the acid is formed. Again, if there were different metals in the mouth, such as gold fillings and those of amalgam; or a gold plate, and plugs of some other metal or *vice versa*, we would have galvanic currents which would readily decompose the water and the chlorides, setting the elements free, and each one would unite with the one for which it had the greatest affinities. Now, hydrogen being an *electro positive* element, and chlorine *electro negative*, their affinities for each other consequently great, they would unite, and the result would be hydrochloric acid.

The soluble chlorides are no doubt decomposed by other means which we may never be able to demonstrate. Probably no man would pretend to say just how every chemical change in the body took place. These are some of the mysteries which, it would seem, were not intended for us to know.

In this paper I do not wish to be understood as intimating that the decay of teeth is entirely due to the action of the mineral acids, far from it; but I do think they exert a great influence upon dental decay, and in some cases it may be that it is entirely due to their action. The action of the organic acids that are found in the mouth no doubt is about the same as the other acids, but much less rapid in their effects.—*Missouri Dental Journal*.

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At the meeting of the medical Society of London held in April last, Mr. Napier read a paper "On an improved method of Stopping or Plugging Teeth," and exhibited some specimens in which the cavities caused by decay were severally filled up with hippopotamus ivory, mother-of-pearl, and india rubber, vulcanised to the consistence of ebony. Mr. Napier desires to obviate the necessity for using metal in any form for stopping teeth, and read this paper with a view to prove the importance of the object he advocated. He argues that one of the principal causes of chronic inflammation in teeth that have been stopped according to the method now in general use, is that metal is a readier conductor of heat and cold than the natural substance of which a tooth is composed. The improvements he advocated would benefit both operator and patient.—*Medical Gazette*.

REPLANTATION OF TEETH IN CHRONIC PERIODONTITIS.—There is nothing perhaps, so unsatisfactory to the dentist as the extraction, in the general run of cases, of teeth for the relief of periodontitis, though it is followed by the cessation of acute pain, especially about the gums and the like, since the teeth themselves are often almost perfect, or at least *per se* in a condition fit for doing good work for many years. The success, therefore, obtained by Mr. Coleman (the details of which will be found in the "Transactions of the Odontological Society" for the month of March) in replanting teeth in the disease in question will be received with unquestionable satisfaction, and the plan no doubt largely imitated. The method of procedure is to remove the diseased tooth; if carious, clean out its pulp and fang cavities, filling them up, after cleansing with carbolic acid, with cotton wool impregnated with the same; then to fill the pulp and carious cavities; next to scrape the fangs free from all diseased periosteum and cementum, but preserving the mucous membrane about the neck; and, after bathing in a solution of carbolic acid the tooth, as well as the alveolus, to return the former to its place. Mr. Lyons carried this out in fourteen cases for Mr. Coleman with success, in the case of bicusps and molars, no mechanical appliances being used to keep the teeth supported until they had become firm. Mr. Coleman believes replantation will become the legitimate mode of treating chronic periodontitis—a mode in which medical practitioners can not fail to take an especial interest, and which harmonises well with the prevailing surgical conservation of the day.—*Lancet*.

THE CAUSE OF DEATH DURING INHALATIONS OF CHLOROFORM.—Dr. Jeannell considers that the fatal issue is principally owing to the terror felt by the patient before the operation, and advises the following precaution. When consent has been given to an operation, the patient should not be made acquainted with the precise day. Whilst he is quietly in his bed the chloroformist should pay him a visit, and say that he wishes to learn whether it will be possible to make him sleep when the day of the operation shall have come round. The patient without fear or apprehension submits to the trial, and, when he is narcotised, is carried into the operating theatre where the operation is at once preformed. All this is done without exciting the least anxiety in the patient, and placidity removes the danger which arises from nervousness and trepidation.—*Lancet*.

OSSIFICATION OF THE DENTAL PULP.

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When ossification of the pulp takes place, it is but fair to infer that it follows upon the irritation which nature establishes to protect the highly organized and sensitive pulp from exposure; and when ossification begins, the process is usually continued till the whole pulp is converted into a substance analagous in its arrangements and constituents to cementum. This change takes place when the pulp is subjected to a moderate amount of irritation and vascular action, but in cases where inflammation succeeds irritation a different result is produced.

Sometimes the irritation which causes ossification comes from causes which may be said to be strictly constitutional; but, as a large majority of cases it is caused by extremes of heat and cold, transmitted through a filling, or through a layer of dentine. While the process of ossification is going on, the patient feels a numbness, and pains more or less severe, lasting for a moment, but as it causes little annoyance, but little notice is taken of it.

When the process of ossification is complete, the inner walls and the crown of the tooth have lost all their vitality, yet, unlike necrosis—as we stated in our last number—there is no appearance of death or decay in the tooth structure; as the central cavity being filled with semi-translucent osteo-dentine, the crowns keep the natural color. Of course, we have no cause to remove a tooth because of ossification, if no other symptoms present themselves. Ossified teeth are useful for mastication and ornament a score of years after the process is complete.—*Dental Office and Laboratory.*

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Be patient with your patients. Teach them that dentists are not made by inspiration; that a dentist—to be worthy of the name—does not become so in a day; that we are professional men; not plasterer's or stone masons; that there is the same difference between the *true* dentist and the charlatan, that exists between the dauber who paints a sign and the master who brings to his studio the knowledge gained by a life time of study of anatomy, coloring etc. Respect yourself, and let the quack have his day. *His* sunset will come at 9 o'clock A. M. Never degrade yourself by doing poor work for a poor price. Merit will, sooner or later, bring its reward, in the answer of a good conscience and "greenbacks."—*Dental Office and Laboratory.*

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 EDITORIAL.
 

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 UNPROFESSIONAL SIGNS.
 

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In spite of the resolution unanimously passed last September, in the Quebec Dental Society, to abolish the use of show cases and such unprofessional means of attracting attention to one's office, three or four members still continue their use. About a year ago there was only one on exhibition in Montreal, and the party using it had only imitated a custom of the time he commenced. A confrere removed his office to the vicinity of this show-case, and found that a number of his patients were misled by it, and attracted to its owner. Now, another confrere who has practiced over twenty-five years and never used one, has lately opened an office in the same locality, and says he will be compelled in "self-defence" to hang out a case. "I will take this course, too," he says, "for the benefit of the profession at large, and to force out the unprofessional practice." Several Quebec (city) dentists have also written to us on the subject, and the question has been asked "have we the power to prevent their use?" We think not. The law cannot step in, and dictate how a man shall advertise. No code, but one of ethics adopted by the Society or a resolution such as that passed in September, can affect the question, and only then when the users of show-cases are members. The Board of Examiners have no power to act in the matter. The best way to have it settled is to bring it up pointedly at the next meeting of the Society. Mutual conciliation always works better in such matters, than fisticuffs. Whoever uses a show-case or similar unprofessional sign, must expect it to be taken as an indication of quackery. Let them be hung in the surgery if desired; but not at our doors, where they always present a disgusting aspect to intelligent people, and serve to mark a serious line of demarcation between men who would have no other objection to meet together were they removed. Their absolute removal would be one great advance towards that harmonious union of the profession for mutual instruction, for which we hope and work. Take them down just for one year to try the effect.

W. G. B.

LATE.—We have to crave the indulgence of our readers, on account of the late appearance of this No. and No. 12. We will try to be more punctual in future.

## THE MEETING OF THE DENTAL SOCIETY.

The meeting of the Ontario Society, on the 7th inst., was one of the most harmonious dental meetings that has ever been held in the Province. The proceedings commenced at the hour named and were carried on with spirit throughout the session. We sincerely regret that so few of the members of the profession attend these meetings, forty-five, we believe, was the highest number in attendance at one time during the session. The essays were good and brought a good deal of profitable discussion, and we feel certain that those who remained at home would be far better off one year from this, had they attended the meeting, than they will be as it is.

A committee was appointed to draft such amendments to the Act as they might think necessary, and to report before the final adjournment. That committee, in the report, very properly, we think, suggested the propriety of relaxing the present stringency of the law in regard to foreigners, and also, the recognizing of the diplomas of the American colleges. The idea of such liberality was too much altogether for the weak nerves of some of those present, and of course it was thrown out. One of the arguments against recognizing the diplomas of the American colleges, was that it would injure our own school. If our school is to be propped up by such means, it had better be done away with at once. Make our school equal to theirs and we need have no fear of competition. It is natural that Canadian students should prefer Canadian institutions of learning, and they will remain here if they can get as good a dental education here as in the States.

We are sorry to see such narrow-minded views prevail, but hope that before long a majority of our brethern will see the propriety of admitting all foreigners to our ranks, if they are as well qualified to practice as we are ourselves.

C. S. C.

We have received the annual announcements of the Pennsylvania College of Dental [Surgery; and the Philadelphia Dental College. We are gratified to learn of the continued success of these invaluable adjuncts to dental education.

SPECIAL NOTICE TO SUBSCRIBERS IN ARREARS.—As the next number will complete Volume 2, we earnestly beg our friends in arrears to remit without delay. We are anxious to wind up the accounts of the present volume before entering on the next.

THE  
CANADA JOURNAL  
OF  
DENTAL SCIENCE.

VOL. II.]

AUGUST,

[No. 12.]

ORIGINAL COMMUNICATIONS.

EDITORIAL NOTES ON PRACTICAL SUBJECTS.

EXPLOSION OF A VULCANIZER.

BY W- GEO. BEERS.

My neighbor, Mr. C. Brewster, sent in for me on the 22nd of last month, to see the result of the explosion of a vulcanizer, which had just occurred in his laboratory. The scene was one of chaos.

The vulcanizer was a Whitney, No. —, for two flasks, and had been in use for about seven years. The brass top with thermometer attached, was blown straight up through the ceiling, a distance of twelve feet, making a round hole as clean as if cut with a sharp knife. The copper boiler was thrown into a corner to the left, and would no doubt have gone further but for the impediment of a hard partition. A flask containing an upper case of gum teeth was lying under the work-bench, about eight feet to the right from the place where the vulcanizer had been. The following simple diagram will explain exactly the flight  $\begin{matrix} A \\ B \wedge C \end{matrix}$  A being the direction upwards taken by the brass top, B the direction taken by the boiler, and C by the flask. The centre of the brass top was raised about the eighth of an inch; the thermometer guard was twisted into a spiral form and forced partly off the screw. The boiler had several large dinges, and one in particular in which might be placed a large walnut: was cracked in several places around the screw, and a deep groove cut on the inside, as if by collision by some hard substance, or by the jamming of the flask

as it shot out. The whole apparatus was entirely twisted out of shape; the lead gas-pipes and a zinc jacket were literally ripped to pieces; several steel excavators which had been attaching a shelf, were bent up like bones, and one driven an inch into the floor. The paper on the wall was stripped; maps thrown down, and a wooden shelf was smashed into chips, and a large clock thrown off the wall. Strange to say, though the flask was bent not a tooth was cracked, and not even the arrangement disturbed.

The most maraculous part is that Mr. Brewster, who was standing not more than three feet from the vulcanizer, was untouched, and saving a deluge of lime and dust and a terrible stun, as if struck on the head with a mallet, and a stupor for two days, he escaped unhurt. Had he been standing two feet nearer any other part of the room he must have been injured, and possibly killed, as fragments of the explosion were thrown into every other part of the laboratory except within his immediate place. It was a most Providential escape, and only Providential.

Mr. Brewster says there was no loud report that he heard; all he knew was a sudden stun on the head, and the after realization of the explosion.

The cause is solely attributed to the high pressure of steam, as Mr. B.'s assistant had about five minutes previously turned on an unusually large full flame of gas. The explosion must have occurred at about  $430^{\circ}$ . No blame is attached to deterioration in the boiler, as it and the brass top remain almost perfect, excepting a few cracks and dinges. Is it not possible that the *too rapid* generation of steam had considerable to do with the explosion, and that the copper boiler may have deteriorated so much as to unfit it for safe use, though even now it looks very safe to the eye. A proof that the fusible safety plug is not always reliable as a test of the pressure of steam, is that it still remains in the brass top of this exploded vulcanizer.

This adds one more to the warnings to use diligent care with the vulcanizer, and never comfort oneself with the assurance that because ours has never blown out the fusible plug, it never can blow up till it does, and that because the process of vulcanizing is simple, it may not be also considered dangerous. After a few more have had their heads blown off, we shall begin generally to realize the little terrors we are daily using in our laboratories, in the vicinity of which, we, our assistants, and often our wives and families may be calmly sitting.

## THE HYGIENIC MEANS OF PRESERVING THE TEETH.

BY G. O. Fiset, D. D. S., QUEBEC CITY.

CONTINUED FROM PAGE 328.

The confectionary colored with mineral substances is a poison to the system, and also acts upon the dental structures in two ways; a rechrystallization of the sugar takes place on mastication, small particles of which being forced into the fissures (consequent upon the malformation of the enamel of the grinding surfaces of the bicuspid and molars, or by accident) and remain stationary; the first thing occurring is the immediate action of the colouring matter, the second is the acetous fermentation of the sugar. The common or cheap confectionary is frequently coloured with mineral substances, but I believe not as much in this country as in other countries, judging by the very few cases of poisoning on record from the eating of confectionary. The substances mostly used are the carbonate of copper, sulphide of mercury, &c. Confectionary or candies colourless or coloured with vegetable substances act upon the teeth only in one way, that is, by the fermentation of the sugar into acetic acid.\* Ripe fruits also act by acetous fermentation. In all cases where starchy or saccharine food is taken, *ptyaline* or the animal principle of the saliva acts as a ferment, but so long as such does not become stationary in or about the teeth there is no danger to apprehend.

Although I believe that once the dentinal tissue has become diseased, and an acid is formed by the decomposition of its salts and a degeneration of its organic matter, too much care cannot be taken to prevent the formation of acetic acid by the fermentation of sugar, therefore, after any saccharine food has been taken, luke-warm water should be recommended to be used in order to dissolve the sugar which has lodged into the fissures and other portions of defective teeth. Sweet beverages do not act deleteriously upon the dental organs, because their transition through the mouth is too sudden for any fermentative action to take place. *Picromel* is one of the animal principles contained in bile, so that vomiting of that fluid alone cannot cause any injurious effect upon the teeth, as that principle pertains to the class of imperfect sugars. The drinking of very cold water, or the eating of ice cream or other substances of a similar kind, immediately followed

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\* The confectionary coming under that head is generally coloured with cochineal.

by that of an opposite nature, tends to the production of crevices in the enamel, the change of temperature being so sudden. In the correction of irregularities of the dental arch ligatures are frequently used, they absorb and retain within their fibres, acids and other deleterious agents, which by their immediate contact produce evil results, for that reason the ligatures should be changed often.

Tobacco acts upon the system as a nervous sedative. Its alkaline principle, which is nicotine, acts in the same manner upon the dental fibrilæ on their exposure, (*i. e.*, when the dentine has been deprived of its protection, (the enamel) from disease) and by its continual action impairing their vitality, involving the loss of the recuperative power of the *germinal matters* of the cells, which is thereby metamorphosed into *formed material*, the latter fusing together is hardened by the disposition of calcareous salts, being the last stage of calcification or the formation of *estéo-dentine*. The same thing occurs in cases of exposure of the pulp, especially one case on record, to which I refer the readers of this article, which I believe is to be found in the last February number of the *Dental Cosmos*. We must, therefore, infer that the smoking or chewing of tobacco in excess, acts as a nervous sedative on the system, and consequently proves ultimately injurious to weak constitutions; that its action upon the nervous element of the teeth does not altogether destroy the life of the organ, although a portion of its vital principle is sacrificed.

There are many diseases, general and local, which influence a chemical change of the saliva, and others preventing the secretion of some of the salivary fluids, in the former instance the saliva becoming acid. There are also certain physiological phenomena which act in the same manner. Dyspepsia and all disorders of the mucous membrane of the alimentary canal, fevers of all kinds, mercurial ptyalism, pthisis pulmonalis, syphilis, amenorrhœa, and pregnancy, act indirectly upon the teeth.

In dyspepsia, and in all gastric affections, the saliva is acid, its condition being regulated by, and dependent upon the state of the digestive apparatus; in the former disorder the acid eructations from the stomach in connection with the acidity of the saliva, exert a most pernicious effect upon the teeth. For that reason it is almost impossible to save the teeth of persons suffering from chronic dyspepsia. Vomiting acts in the same manner, both producing that disagreeable sensation called *cataplexis* (toothedge).

Stomatitis and other diseases of the mouth induce a morbid as well as a more profuse secretion of mucus, which has always an acid reaction, is extremely viscid and is imparted by its animal principle, *mucosine*, and clings to the teeth most tenaciously. It is secreted alone in the advanced stage of fevers, or diseases attended with fever, but in health it is neutralized by the other salivary fluids which are alkaline, except during sleep, when it is the only active salivary secretion.

Mercury, when administered, does not act directly upon the dental organs, but causes a profuse secretion and vitiation of the oral fluids, which produces gingivitis, resulting in an undue flow of mucus at the margins of the gums, having a direct influence upon the unprotected dentine at the necks of the teeth, where we find the junction of the enamel and cementum. After the effects of the mercury in the system have subsided, to reduce the inflammation of the gums a resolvent should be prescribed; in consequence I would recommend the use of the following gargle and mouth-wash, which is beneficial in such cases.

R. Potassæ Chloras 1 dr., or, R. Potassium Iodii 2 gr. to 1 dr.

Aqua, 1 oz.

M.

Persons suffering with dyspepsia or mercurial ptyalism, should be cured before any operations upon the teeth are attempted. They should also be instructed to consult the dental surgeon after recovery from any serious malady. We dentists must educate our people to the appreciation of dental services, and impress their minds with the idea, *that a normal condition of the teeth is absolutely necessary to the preservation of the general health.*

Pthisis pulmonalis is accompanied with fever which acts upon the buccal secretions as already described, and by the continued exhalation of the gases generated by the diseased lungs, and purulent expectoration. It may also depend upon the improper nourishment of the teeth, from the absence in the system of a sufficient amount of phosphates.

Syphilis produces a vitiated state of the glandular system, and in that manner acts indirectly upon the organs of mastication.

Amenorrhœa acts upon the teeth by influencing a change of the fluids of the body, the saliva being of the number. That is the reason why the teeth of females, on an average, decay more readily than those of males.

The state of pregnancy is conducive to the production of caries of the teeth. It is the case with delicate females who have enjoyed the luxuries of fashionable life, and have turned the hours of sleep into that of mirth and pleasure, and when they become pregnant, instead of appropriating the phosphates which they require for the nourishment of the osseous, dental and other tissues of their own organism, it goes to the foetus, the consequence being that the health of the mother and that of the child (after birth) suffer producing as well decay of the teeth in the former, and their malformation in the latter.

We have seen that, unfortunately, several of the aliments and condiments forming part of our diet, some of the local and general diseases, and even some of the vital phenomena conducive to the production of dental disease. The preservation of the temporary organs of mastication are as essential to the existing and future welfare of a patient as that of the permanent ones, and the same hygienic means above mentioned for their preservation are applicable.

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### DENTAL EDUCATION.

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Read before the Ontario Dental Society by

C. P. LENNOX.

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I have selected for a subject, that which, I think, has not previously been brought before you, and when the good of the profession is taken into consideration, should stand side by side with other great movements towards its elevation to a high standard of respectability. I refer to the educational qualifications or literary attainments of Dental Students.

There is no avocation in life which does not require a degree of educational qualifications in order that it may be successfully followed. From the humblest artizan to the most dignified professional, any lack of education which the calling of either demands, is recognisable, and brings with it a degree of regret or contempt. The swarthy smith who deals with the king of metals, and subjects to the requirements of civilization, in order to a successful transaction of his business, requires it to a limited extent; while the professional man, who has the writings of great minds to digest, and whose judgment, at times, undergoes the most trying ordeals, requires to be highly educated.

It depends, therefore, gentlemen, where you rank our profession to be able to decide whether or not our men should be educated to a higher or lower degree. If we are to occupy that position to which some would consign, viz: if we are to be regarded simply as manufacturers of artificial teeth; if we confine ourselves only to this branch of our profession, and recognize it as dentistry; then we are on a level with the smith, and our education need be of no higher grade than his, but, if we rank ourselves with the members of the ancient, honorable and learned profession of medicine, who, I am happy to say are holding out the hand of recognition to us, then we must be equal to them in educational attainments.

The great object at the present day on the part of the legitimate members of our profession, is, to exalt it to that standard of respectability, which shall merit that recognition bestowed upon us by our brethren of the medical profession, and many noble men have devoted their energies, time and capital in order to rear it to its present position of respectability. Indeed, I may say that a new era has dawned upon us, and that the dental world is effectually laboring to accomplish the same end. In this little Canada of ours, whose institutions, though but an adopted son, I have learned to love, although of little importance, likely, we are not the least in the good work. "Our banners have been hung upon the outer wall," and quackery has received its death blow. No longer shall the fair fame of the dental profession be blasted by the evils forced upon a confiding public by a class of traveling usurpers, but the public will be forced to patronize those, whom, I hope, they will also learn to respect because of merit.

In directing the mind's eye through the vista of the past, and following up the path which our profession has trod, we see much to encourage us and not a little which may be regretted. Noble men we discover contending with the superstition and bigotry surrounding them, bearing aloft the insignia of their rights to respectability. The time is fresh in the memory of many of us, when the idea of professionalism being granted to dentists was considered a thing absurd, and more especially was this so on the part of the medical fraternity, when the dentists dare claim the right of recognition for his calling as a branch of the medical profession; but we will prove to the world the right of such recognition. Already we find, that, with but few exceptions, the hand of

recognition is extended to us by the medical men of the day, and we are regarded as the younger offspring of that noble profession, and although existing in our infancy, we have a being, and are rapidly approaching vigorous manhood.

Since, then, we are advancing to manhood, professionally, I venture the assertion, that our profession will not be confined to the narrow link at present encircling it. There are those diseases of the face and mouth which should properly come under the treatment of the dentist; many of them calling forth the greatest surgical skill, and when the profession is universally stocked with men capable of treating such cases, then will the dentist be called upon universally to do so. In order that such men may constitute its membership, it is absolutely necessary, that none be admitted to our offices as students, who do not possess educational qualifications equal to that required by the medical board. It may appear to some, that this is carrying the matter to excess, to whom I reply, that, if you never intend any advancement in your calling, if you are content to grovel in ignorance, with an intelligent world giving you the cold shoulder on account of that ignorance, if mechanical dentistry, and that very unmechanically done, is your highest ambition, then, to you, the matter is carried to excess.

The educational qualification required for matriculation in our medical schools would be all the better were it still of a higher grade. The man, who at times, holds the lives of our dear ones in his keeping, should be master of every facility for a proper understanding of his profession, and that a high grade of education is one of those facilities is proved by the fact, that none but the highly educated ever excel or obtain merited fame in the practice of medicine. Why this is so, is simply from the fact, that educated men are generally profound thinkers, possessing a greater power of judgment than those less highly educated, as all the text books used in modern schools of medicine are the productions of educated minds, the educated student has less difficulty in understanding them thoroughly.

But the object of this paper is to show that the dental should be equally educated with the medical student. This is so: because the dental profession is a branch of medical science: because one of the specialities of the dentist, is the treatment of disease, calling for, at times, profound judgment: because another specialty is surgery, sometimes demanding the greatest surgical skill; because the text books of the medical, are also, to a great extent,

those of the dental student. Anatomy, the first book placed in the hands of the medical, is also the first presented to the dental student, and is "the substratum of all medical knowledge." If medical science depends upon a thorough understanding of anatomy (this will also apply to dental science), is it possible for any one to be a thorough medical man who is not a classical scholar, since we must admit that the anatomist must be a classical scholar. This is true of any other study connected with the profession of medicine, and as the dental profession is so closely connected with it, the dental student using the same text books, and undergoing to a great extent the same training; it follows, that what applies to the one will apply to the other also.

It is a general conceived notion, that the profession adds dignity to the man. This is a false idea; it is the man who dignifies the profession. Can you show me anywhere, one illiterate man of whom it may be said, he dignifies his profession? It is impossible. If this is true, gentlemen, is our profession to be an exception to the rule? The educated mind dignifies the man, and, if the profession of dentistry is to be exalted in the eyes of an intelligent world, it must be done through its membership, and that membership must be composed of men possessing cultivated minds. Intelligent people always desire to associate in their business transactions with intelligent men, and never fail to honor the calling for the sake of the man.

It has not been my intention in these remarks to cast a shadow upon the mind of any humble worker in the right direction, whose literary attainments are of a limited character. Be it remembered that the majority of us are of such, and let it urge you onward, when you recognize the fact that an incarnate God made choice of the humblest of Judea's sons as instruments to establish that religion which claims the great men of the world for its advocates. I have intended these pages to apply more particularly to the coming dentist than the existing one; but should they stir up to action the slumbering energies of any member of this society, my object will be more than accomplished.

To my young brethren possessing limited education I would say that two hours daily devoted to your books, even without a teacher, will, in a few years give you that position in your profession and in society, of which you would be proud, and prove to you, that an appreciating world does and will honor the educated men. The world's history points me to men who have climbed

fame's ladder to its highest round, and did it in this way, under less auspicious circumstances than at present surrounds you. Why cannot you do it? Who says, I will?

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### NOTES OF SOME EXPERIMENTS IN VULCANIZING INDIAN RUBBER.

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Written for the Ontario Dental Society, June 8th, 1870.

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In all the range of mechanical and industrial arts, there is, perhaps, no one article which has been made available for so many and so multiform uses as Caoutchouc, or Indian Rubber.

Fifty years ago it was imported from the East Indies, solely for the manufacture of pencil erasers.

Since then human ingenuity has made it subservient to our necessities, comfort and luxury in a thousand different ways. The uses and importance of indian rubber have been very greatly increased by the discovery of Charles Goodyear, that, when india rubber and sulphur were mixed in certain proportions and the compound submitted for a considerable time to a high temperature a product was the result which was hard yet elastic, dense yet flexible, and for all practicable purposes insoluble. The name given to this compound is vulcanized rubber.

These valuable properties brought the vulcanite immediately into the notice of manufacturers of various classes of goods, and during Goodyear's lifetime it had been employed in the manufacture of more than 500 distinct articles, protected by 62 patents, obtained from the American, English and French Governments.

About twelve years ago it was proposed to substitute vulcanized rubber for silver and gold as a base for artificial teeth. The compound then introduced was said to be composed of about four parts of rubber, three parts red sulphuret of mercury and two parts flowers of sulphur. This was directed to be subjected to a temperature of  $320^{\circ}$  for a period of from four to five hours.

This, when properly manipulated, produced a material more perfectly suited to the wants of the mechanical dentist than any preparation of rubber which has since been introduced.

Whether the compound was essentially different from that now in use, or whether the cumbrous, complicated and expensive apparatus then used for vulcanizing, requiring a much longer time for completing the hardening process, was better suited for the manufacture of a strong article, the fact, I think, will scarcely be

disputed by those who have paid any attention to the subject, that the earlier specimens of vulcanite introduced into this Province, while equal in color and in susceptibility of polish, were much stronger and less liable to wear and lose their polish in the mouth than the varieties now in general use.

The introduction of vulcanite into the dental laboratory while heartily and almost enthusiastically accepted by a great portion of the profession, was met by the earnest protest of nearly all the more prominent and more advanced dentists of Philadelphia, New York and other large American cities. This protest was founded on the fear that the comparatively small amount of skill required to manipulate the rubber would enable empirics and unscrupulous men to reduce the price of artificial dentures as to make very many ignorant persons neglect the preservation of the teeth, have them extracted and replaced by artificial ones, to their own personal and permanent injury and to the great injury of the of the conscientious and high minded dentist, who must ever consider the preservation of the natural teeth the highest aim of his profession. The result has unfortunately justified the fear. Thousands of teeth are each year being extracted, which by skillful treatment might have been preserved. It is a subject on which much difference of opinion may well exist, whether, after all, the benefits to humanity resulting from bringing the price of artificial dentures within the easy reach of all classes of the community, has not been more than overbalanced by the wanton extraction of the natural teeth which has also resulted from the same cause.

In spite however of this opposition, founded on a praiseworthy conservatism and of the still more widely spread opposition which arose owing to the oppressive exactions of the representatives of the Goodyear patent, vulcanite as a base for artificial teeth has become all but universal.

The section of the profession which thus gave the "cold shoulder" if not actual opposition to this innovation in mechanical dentistry comprised probably a very large proportion of the dentists who have the skill, the taste, the knowledge and the means necessary to imitate and carry on to completion such experiments as might result in very materially improving the vulcanite for dental purpose. Not approving, they have declined to attempt improvement, hoping rather, perhaps, that acknowledged defects might eventually drive the material from the laboratory.

On the other hand a very large portion of our profession, in this

as well as other countries, practice dentistry simply for the dollars which it brings them, and are consequently satisfied with any material that is offered them, which tends to increase their profits. From these, and it may be other causes, improvement in vulcanite for dental purposes has been left mainly to the manufacturers, who, apparently satisfied with their sales, put themselves to little trouble to cater to the wants of the progressive dentist.

On no subject of anything like equal interest to the dentist has so little been published in our dental periodicals by the prominent men of the profession.

While regretting that such should be the case, I do not for a moment presume to be able to supply the deficiency. However good the will to do so might be, the necessary leisure, skill and means are entirely wanting.

The experiments proposed are within the easy reach of every intelligent dentist.

If we have not the means at hand of improving the quality of vulcanite, we have at least the means of ascertaining by careful experiment which, of all the samples offered to the profession, are best suited to our wants, as also the heat and length of time necessary to produce the best vulcanized rubber. On these two points I propose to experiment. When the subject of this paper was announced I expected to have had much more leisure to devote to it than other and pressing engagements have left me.

The samples which I have tested are nine in number, viz.: "Boston Star," "English Red," "English Pink," "Hard Rubber Co.," "Black," "White," "C. Ash & Son," "Johnson & Lund," and a sample furnished by Mr. Chittenden, maker unknown. The results, while they have not been entirely satisfactory to myself, have induced me to discard the rubber which I have been using for some time from the conviction that it is not equal in strength to other samples of equally good appearance. The essentials of a good rubber are toughness, elasticity, rigidity with a certain amount of flexibility, suitable color, density, and susceptibility of polish. To ascertain the comparative degree in which these characteristics were possessed by the samples under consideration I carefully prepared two small strips of each—making them all as nearly as possible of the same size and thickness.

These I vulcanized, the first series, for one hour, at a temperature of 320°. The second series, for forty minutes, at a temperature of 350°. Having them prepared, to ascertain their relative

strength I secured the end of each in a small vice and broke them with an ordinary spring balance, applying the pressure as nearly as possible at right angles to the piece, and carefully noted the number of pounds force at which each broke. This register was as follows:—

Boston Star....1st series	20 lbs	2nd do.	18 lbs.	C. Ash & Son..1st series	14 lbs	2nd do.	9 lbs.
Hard Rubber Co.1st do.	20 "	2nd do.	16 "	Black.....1st do.	10 "	2nd do.	12 "
Johnson & Lund.1st do.	18 "	2nd do.	8 "	Chittenden....1st do.	7½ "	2nd do.	5½ "
English Red....1st do.	14 "	2nd do.	16 "	Pink.....1st do.	5 "	2nd do.	6 "
White 1st series 5 lbs. 2nd do. 5 lbs.							

The Boston Star and Hard Rubber Co., broke with a fibrous fracture, indicating toughness, strength and flexibility.

Johnson & Lund's exhibit the same characteristics but in a somewhat less degree, especially the sample vulcanized at the higher temperature. The English Red and C. Ash & Son's are of about equal strength though much inferior to the former. The "Black" bent and cracked at 12 lbs. indicating a lack of rigidity and elasticity, when vulcanized at ordinary temperatures. Mr. Chittenden's sample, though supposed to be something extra costing \$10 per pound, proves to be inferior, the strongest sample breaking at 7½ lbs.

The White and Pink break with a clear crystalline fracture at about 5 lbs., showing them to be quite worthless for making dental plates.

In color Johnson & Lund's to my mind is the most pleasing, though not by any means of a gum color. Boston Star and Hard Rubber Co. are a shade darker though of the same bright color. English Red and C. Ash & Son's are very much alike, of a dark brown shade. Pink is perhaps the nearest the color of the healthy gum. All the samples of red rubber tested are capable of a good polish. Examined through a powerful magnifying glass the Pink and White exhibit a large proportion of earthy matter which appears to be very badly mixed. The bright colored samples, Johnson & Lund's, Hard Rubber Co., and Boston Star appear to be almost perfectly homogeneous, Johnson and Lund's the more dense, Boston Star the more porous. English Red and C. Ash & Son's are very evenly mixed, of fine materials, very dense, and probably capable of a higher polish, but not equal to the red samples in strength. The Black would seem from its toughness to be well adapted for clasps, but does not vulcanize thoroughly at the heat required for red. In the sample tested the sulphur does not seem to be perfectly mixed with the rubber, leaving small

soft spots in the vulcanized article. For all purposes I would prefer of the samples before me the Hard Rubber Co.'s, as combining in the greatest degree the characteristics of a good rubber. It will be observed that with one exception the samples in the first series were stronger than the same rubber of the second series, some of them very markedly so. From this and other observations made from time to time I am of opinion that increasing the heat beyond 320° and shortening the time produces an article inferior in strength.

My impression is that vulcanizing the varieties in general use at a temperature of from 290° to 300° for 100 to 120 minutes would produce an article of better color and of materially greater strength. I hope some day to have leisure to verify these experiments and to satisfy myself more fully of the merits of the various preparations of rubber offered to the profession. In the mean time if I have excited in the mind of any member of the society sufficient interest in this question to induce him to experiment for himself my object in writing this paper will have been fully accomplished.

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## PROCEEDINGS OF SOCIETIES.

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### FIRST DISTRICT DENTAL SOCIETY OF NEW YORK.

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At the meeting of this society, held in April, 1870, a paper was read by Dr. Atkinson on "Wasted Alveolar Process."

The paper started out with the declaration that to ask questions upon this particular subject requires more of him who is to *answer*, than enters into the mind of most persons who ask them. The greatest difficulty in the way of clear elucidation and explanation to dentists as a class, is their utter lack of knowledge in histology.

"Coming into the practice of dentistry from the shop, rather than from the college, is the principal cause of this lack." "And even those who have availed themselves of all the colleges have taught are yet in the alphabet of histologic science." "Inspection of the exterior of systems and organs is not sufficient,—we must become familiar with the character of bodies too small to be seen by the natural sight, before we can comprehend the subject of function." In order to make a proper diagnosis and prognosis of a case, a knowledge of the formation, growth and nutrition of the parts concerned is necessary. The normal function of the territory

concerned is to accept or reject the pabulum or non-pabulum respectively; "the two conditions of interference are deficiency and excess of the work of the normal functions." The elemental bodies of the alveolar process are a mixed example of mineral and vegetable elements, produced and maintained in specific degree of differentiation by animal surroundings: the first being pabulum; the second, nervous; the third, vascular in character. These animal bodies themselves partake in their degree of the character of vegetable and mineral modes of maintaining existence." "The enamel is maintained in sound condition exactly as crystals are in the mineral domain of natural bodies: the dentine is kept in condition by the to-and-fro movement of fluid in the passages which admit it, after the manner of vegetable." "Bone is supplied by a mixed expression of these mineral and vegetable modes of endowment: cement may, in this sense, be classified as bone; although it is the compromise of nutrient activity, just midway between dentine and bone proper, of which the alveolar process is a legitimate type."

The gum tissue, wrought out of the blood corpuscles, and callagonic fibres, is well supplied with blood-vessels, but sparingly with nerves, especially the margin around the neck of the teeth, which is wrought into connective tissue fibres, and constitutes the "ligamentum dentium."

(It is impossible to do justice to the remainder of the paper without quoting it entire; but a few points only can be given here.—Sec.)

"There are two forms of wasting of the alveolar processes, viz., solution of earthy material in the membranous or callagenous matrix,—the latter remaining entire in place—and solution of both matrix and mineral salts." "The latter occurs under two forms also," "atrophy," and "ulceration." Ulceration is the result of systemic debility or local uncleanness; "atrophy results from pauperized blood or mechanical interference." Mechanical disturbances are of two kinds,—foreign matters, and injudicious cleansing operations.

"The production of the alveolar processes is part and parcel of that of dentition; and the only reason why the alveolar processes are liable to wasting and reproduction to a degree not known to the "enamel and dentine, is in consequence of the difference of the mode of growth and nutrition." "In all cases of wasting caused by constitutional degeneracy, general treatment combined

with local cleanliness will be the remedy." In cases of ulceration, cleanse, and use a strong solution of chloride of zinc. "After which, establish correct hygienic habits, and all is well."

The brush should be moved in a line with the tooth, from gum to crown, and never transversely. Polish off Nasmyth's membrane so soon as the crowns of the temporary or permanent teeth emerge from the gums.

The doctor then proceeded to speak at considerable length on the subject, and said the teeth were sometimes brushed too much, and poor brushes and injurious dentifrices are used. He recommended J. D. White's brush; said correct hygienic habit consists in keeping the mouth and teeth clean: remove everything that does not belong there. He only objects to injudicious manner and means.

Dr. Bogue does not think that Dr. Atkinson has ever seen teeth brushed too much, though he may have seen them brushed improperly, unless it may be in cases of ptyalism, or where the necks of the teeth have been denuded by salivary calculus or accident. If the mouth is opened, and the teeth brushed by longitudinal motion and a rotary movement, so that all four sides of the teeth are thoroughly cleansed and the gums properly excited, you will have no injury, but only benefit, from brushing.

Dr. Francis related a case of a lady who had for years been troubled from inflamed gums. At times they would swell so as to almost envelop the crowns of the teeth; alveolar process was much absorbed, and several of the incisors, both superior and inferior, had worked considerably out of position; patient had taken rather more than ordinary care of her teeth and gums, by daily cleansing, and occasionally using astringents. Her mother lost her teeth at an early age; and the children of the patient, of seven, nine and twelve years of age, exhibited evidences of a similar trouble. He considers this case a constitutional difficulty. In the large majority of cases where gums are diseased, he attributes the cause to collections of extraneous matter which find lodgment about the necks, and fill the interstices of the teeth. Harsh, gritty substances, used as dentifrices, will cause irritation to the gums. He condemns the use of charcoal; for, however finely powdered it may be, its sharp insoluble particles insinuate themselves into the gums, where they remain imbedded for years.

He objects to having dentists say that teeth are injured by

brushing; believes that where one person brushes too much a thousand are remiss. He hardly ever sees teeth as clean as they ought to be, and lectures his patients continually for the want of thoroughness. He does not base his opinion from office patients only, but from *general* observation. The American people have a bad habit of keeping their lips apart, and thus exposing their incisors. The rich and poor, residents of cities and country towns, all suffer in consequence of neglect to keep their teeth clean. People naturally shirk this duty, and are too ready to take advantage of statements made in regard to overbrushing. A physician once said to him that people in this country wore their teeth all out by brushing, and he always condemned the use of a tooth-brush.

Intelligent dentists should be cautious about making statements that encourage people to neglect keeping their teeth clean.

O. A. JARVIS, *Secretary*.

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#### ODONTOGRAPHIC SOCIETY OF PENNSYLVANIA.

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A MEETING was held on Wednesday, February 2, 1870, in the Philadelphia Dental College building. The President in the chair.

Dr. M. Lukens Long presented a left inferior twelve-year molar, having three roots.

Dr. Alfred Cogswell, of Halifax, Nova Scotia, forwarded a canine tooth, with what appeared to be a deposit of salivary calculus near the apex of the root.

Dr. C Butler, of Cleveland, O., presented a cast of a case of muscular contraction of the jaw, from the effects of salivation.

The following gentlemen were unanimously elected as corresponding members:-

Dr. J. G. Perry, No. 111 Madison Avenue, New York; Dr. William M. Hunter, Cincinnati, O.; Dr. J. N. Niles, West Halifax, Vt.

Then followed a somewhat lengthy discussion as to the origin and cause of the deposit at the end of the root of the tooth presented by Dr. A. Cogswell.

Dr. Grady, of California, had met such a case in the mouth of a gentleman of sanguine temperament. The removal of the deposit was more difficult and painful than the extraction of the tooth itself would have been.

Prof. McQuillen considered the case as interesting as it was

rare, and believed it was a deposit of salvary calculus through a fistulous opening of a long-established abscess.

Dr. Eisenbrey thought the deposit on this specimen, judging from its character, was from the saliva, and not from the mucous glands. The deposit thrown down from the mucous secretions of the mouth partake largely of organic material, and are very injurious both to the gums and teeth when decomposing, while that from the salivary secretion furnishes an excess of inorganic material; and such appears to be the composition of tartar on the present specimen. The character of tartar, though very irritating to the soft tissues, exerts a preservative effect on the teeth themselves, though eventually it proves their destroyer by taking away their support. It is not at all uncommon to find teeth under the tartar sound, white, and as well preserved as it is possible for them to be, and if it fill a cavity of decay, it will often preserve the tooth.

How this deposit got to the apex of the root is a question that each one can answer for himself, but none can describe it satisfactorily. Just as it collects around the necks of teeth, so it may reach and collect at the apex. This specimen presents the appearance that an effort has been made to remove the tartar, which was unsuccessful; hence the result was the loss of the tooth, from the inability to remove the cause. Had thoroughness attended the operation, he makes no doubt that the tooth would have remained comfortable and durable for a long time to come.

Prof. Stellwagen explained a manner in which the tooth might have been held in a position by a small portion of the periosteum (peridentium, pericementum), a portion of which was still firmly attached to the specimen on one of the approximal surfaces of the root, and which seemed to have been the only point of attachment left at the time the tooth was extracted, since there was no trace of any other, and the tooth, it was said, had been very easily removed, showing this slight point was that by which the tooth was suspended in a cavity formed by the alveolus, lined perhaps with periosteum. (Such cases are often met with in alveolar abscess, when the pus discharges around the neck of the tooth.) The free motion of the tooth, oscillating like a pendulum, surrounded where it emerged from the cavity by the mucous membrane, made it a kind of pump piston, sucking and forcing the fluids of the mouth up to the top of the cavity; in this the free margin of mucous

membrane acted as a valve to retain it, and the deposition of the foreign matter could readily take place,—the friction of the sides of the tooth against the sides of the cavity keeping it clean there, and the apex, from want of, or only very slight motion, permitting it to remain as deposited.

Prof. McQuillen spoke of the new remedy, the hydrate of chloral, some of which he exhibited, and, directing attention at the same time to the possible use that might be made of it in excavating sensitive teeth and in the extraction of others, he then proceeded to make the following experiments :

I. A solution was made, which was allowed to stand some minutes before using, and from the evaporation of the volatile portion it lost its effective properties, so that, when injected under the skin of a frog, it only produced slight insensibility of the eye.

II. Ten grain were dissolved in water, and by the hypodermic syringe were thrown under the skin of the thigh of a frog. In ten minutes there was a complete anæsthesia, with a tetanoid and injected condition of the lower extremities, particularly the one to which the application was made. Death, without any appearance of pain, followed in eleven minutes, and upon opening the thorax the heart was completely paralyzed, not even answering to the prick of a knife.

III. Five grains as above in a frog showed the effect in two minutes. Animal died in about fifteen minutes, with the same symptoms as No. 2. The blood in each of these were very dark.

IV. Ten grains were used as before, under the skin of the thorax of a cat ; after being held quiet for thirty minutes, she seemed indisposed to move, but remained wide awake.

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A meeting was held on Wednesday, April 6, 1870. The Vice-President, Prof. Kingsbury, in the chair.

Dr. Carl Emmanuel Tellander, of Stockholm, Sweden, presented, through the Corresponding Secretary, some very curious and beautifully constructed extracting forceps, that were made by him in 1840, after patterns used by Dr. Burdell, of New York city. These instruments were about seventeen and a half inches long, the beaks being about two and three-quarter inches to the joint, thus preventing that leverage which such an unusually long handle would give, and at the same time admitting of spring enough to grip very securely without much danger of crushing teeth. It

was a part of the design of their manufacturer to allow them to be held with both hands at once, so as to be serviceable where the operator was weak or timid. There was also a pair of forceps of the ordinary size, with a hook forged upon one of the handles, that projected between them for the forefinger to be placed over.

These contributions were no less valuable as historical relics than for the perfection of their make and finish. After about thirty years of use, they still were almost as free from blemish as on the day they were completed.

The same gentleman also presented a cast in plaster, representing the mouth of a patient for whom he had extracted twenty-eight supernumerary teeth.\*

The Society expressed itself as highly gratified with these valuable additions to its museum, and a vote of thanks was unanimously tendered to the donor, and his name handed to the Executive Committee to report upon for corresponding membership.

Dr. Trueman exhibited some specimens of nickel-plated dental instruments. He said it was considered to be superior to silver, as it was harder, more durable, and not liable to oxidation or discoloration from sulphur. The difficulty of depositing the metal upon steel had recently been overcome, and its efficacy could be judged of from the manner in which the ordinary brass pins wear. These had for some time been coated with nickel.

It was ordered that the subject for the next discussional meeting, Wednesday evening, June 1, 1870, be: "The Free Use of the File and Chisel as a Means of the Preservation of Teeth."

The Corresponding Secretary was directed to address Dr. Robt. Arthur, of Baltimore, Md., stating that the society would be pleased to see him present, and hear him describe the methods approved by him.

In the absence of the regular essayist, Dr. Eisenbrey introduced the subject of absorption and recession of gums from the necks of teeth. He has seen it take place in the mouth of young persons as well as older ones, of both sexes, where the teeth were immaculate and the gums perfectly healthy. He recognizes that hard and frequent brushing, with a stiff brush, the use of charcoal and other insoluble dentifrices, will cause it. But when these

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\* See Transactions of the Odontological Society of Great Britain, where drawings of twenty-four and full description of case are given.

things are not used, and the teeth receive judicious treatment, why does it take place? and what is the treatment for arresting it, or to excite a reformation of the lost parts? In elderly persons he attributes it to the usual waste and repair of the body, and the greater density of the teeth, and consequently a less amount of vitality, and which vitality was necessary to maintain the affinity between the gums and the teeth; such affinity no longer existing, the gum pulls off and supports itself, leaving a portion of the roots exposed to the ravages of decay. He feels a lively interest in the subject from a personal standpoint, having almost every tooth-neck so exposed. By using a tooth powder composed largely of *chalk*, he prevents the softening of the exposed portion of the root. To restore the gum, he has used as stimulants chloride of zinc, nitrate of silver, iodine, etc., but without any perceptible reparative result. The zinc and silver diminished the exquisite sensibility of the cementum, without discoloration, but after a time it again returned.

Dr. Trueman reported twelve cases of capping exposed pulps with oxychloride of zinc. Five were cases of recent exposure; the teeth (two lateral incisors, one bicuspid, and two molars) had given but little pain; all in young and healthy patients. The exposure in each case was complete. They gave no pain during the operation, and, as far as heard from, are comfortable. The bicuspid was filled Jan. 1869; the others are more recent. Four (one bicuspid and three molars) were more favorable cases, the pulp being protected by a covering of dentine, but not sufficient to bear the pressure of filling without the capping. He preferred, in these cases, prepared gutta-percha, or Hill's stopping. In three cases the pain was so severe that the capping was removed and arsenic applied. Although the success attending these experiments was quite flattering, he was not yet prepared to indorse capping exposed pulps as current practice. The cases selected were for patients he frequently met with, and who would report immediately if they gave any trouble. With these experiments he intended to let the subject rest until sufficient time has elapsed to pronounce judgment upon it. He also spoke favorably of Dr. Stellwagen's modification of Dr. McQuillen's lead-water and laudanum mixture for periosteal inflammation, suggested by Dr. S., at a meeting of the Society, Jan. 1869. Since then he had used it quite frequently with the happiest result.

Prof. Stellwagen compared the recession of the gums from the teeth to the absorption of the skin from around the root of the finger nails; indeed it was only an exemplification of the laws of supply and demand witnessed anywhere in the economy. The continued wearing of a finger-ring produces a change in the tissues under it from pressure. If the fingers were not properly attended to, and the amount of work required to keep the growth of the skin from off of the nail neglected, in a short time the cuticle would almost cover the nails, as on the hands of persons wearing splints, the feet of cripples, etc. The teeth, if not properly used in masticating hard substances, would be surrounded by unhealthy and tumid gums, as we see in the sick; while, on the other hand, the too constant or severe use of the nail or tooth-brush produced the opposite results, such as complained of. Again, if a splinter is pushed between the nail or tooth and the flesh, it will cause this same condition, only locally; but if many fine splinters, as are found in the charcoal tooth powders, bole armenia, or any other insoluble dentifrice, are placed under the free margins of the gums, they will cause irritation enough to result in this trouble.

To speak of this condition as occurring without causes would of course be illogical, and no doubt in Dr. Eisenbrey's mouth this state was originated by the use of charcoal as a dentifrice, which he admitted he had employed some years ago. The morbid condition excited then has been kept up since by the lodgment of foreign matter of various kinds, or some irritant.

The treatment, however, is clearly indicated. After having removed the cause, stimulate and guide the parts to regain their former healthy condition, using for this purpose the proper instruments, a soft brush, the finger, and, if necessary, stimulation by washes, one of the very best being the solution of the chloride of zinc, ten grains to the ounce of water, applied of full strength, or diluted as the case demanded, to the necks of the teeth and gums, three or four times per diem on a little cotton wool.

He then stated that he had been experimenting with the oxychloride of zinc, and found that much of it varied greatly in the time required for setting. He had succeeded in getting some that would set in thirty seconds after mixing; hoped to report more fully at a future meeting, but, so far as his experiments had gone, the differences between mixtures containing small quantities of borax and silex with the oxide of zinc and the pure oxide

were not evident. With a fine white oxide he had not even found it necessary to calcine to obtain this result. The fluid used was simply the deliquesced chlorile of zinc.

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The seventh annual meeting was held Wednesday, May 4th, 1870, the President in the chair.

The Recording Secretary reported that nine regular stated and two special meetings had been held during the past year, at which essays were read and discussions entered into. The roll of membership contained 107 names, of which 48 were active, 44 corresponding, and 15 honorary.

The reports of the officers were accepted, and the society proceeded to consider the following amendments to the Constitution, which, according to the custom, had laid over for one year :

“ Any one who shall procure a patent for a remedy or instrument used in medicine, surgery, or dentistry, or who shall keep, or profess to keep as a secret from the profession any compound, prescription, or mode of treatment, in either of the above professions, or who shall enter into a collusive agreement with an apothecary to receive pecuniary compensation for patronage, for sending his prescriptions to said apothecary, or who shall hereafter give a certificate in favor of a patent remedy or charlatan, shall be disqualified from becoming or remaining a member of this society.”

The 4th article of the Constitution was also amended to insert the word “ curator ” immediately after the word “ librarian,” in the list of officers.

The By-Laws had an article inserted to read :

“ The Curator shall take charge and keep an accurate record of all the specimens presented to the society, with the history of each, so far as he can obtain it, and the names of the donors.”

They were adopted separately without a dissenting vote ; and a motion to amend the By-Laws was offered, to make them read : “ The annual dues shall be \$12.” This motion was amended to make the dues \$5, and an amendment to this amendment was made to make the amount \$3 ; these were then laid over for consideration at the next annual meeting, Wednesday, May 3, 1871.

Prof. Kingsbury introduced a preamble and resolutions approving of the course of the Hartford Dental Association, declaring

Dr. Hodace Wells to be the discoverer of Anæsthesia, and inaugurating a movement to raise a monument to his memory.

The following officers were unanimously elected for the ensuing year :

*President*.—Dr. J. H. McQuillen.

*1st Vice-President*.—Dr. C. A. Kingsbury.

*2nd Vice-President*.—Dr. J. L. Suesserott.

*Recording Secretary*.—Dr. Alonzo Boice.

*Corresponding Secretary*.—Dr. Thos. C. Stellwagen.

*Treasurer*.—Dr. Wm. H. Trueman.

*Librarian*.—Dr. C. M. Curtis.

*Curator*.—Dr. S. S. Nones.

*Executive Committee*.—Drs. Pike, Eisenbrey, and Long.

Prof. Stellwagen exhibited splints for fracture of maxillæ capable of adaptation to any jaw, and also of being wired together, thus saving the time required to solder. The case will be reported.

Prof. McQuillen exhibited a necrosed portion of the lower jaw, consisting of a large part of the ramus and body of the bone on the right side, which he had recently removed from a child.

## SELECTED ARTICLES.

### CHLORAL HYDRATE AS A REMEDY FOR SENSITIVE DENTOS.

BY ROSCOE C. MOWBRAY, M. D., D. D. S., WARSAW, ILL.

Two years since the attention of the profession was called—by a gentleman of large experience—to the sulphate of morphia as a remedy of great utility in obtunding the sensitiveness of dentine.

Morphia *does much* to relieve sensitiveness *when placed in cavities*; particularly when it is placed there *properly*. I have never seen a case that morphia would not relieve to some extent, when used persistently.

To obtain the best results, free access to the cavity must first be obtained. This can usually be accomplished without much discomfort to the patient by the use of small chisels, from a lime to a half a line in width, and a mallet.

After carefully removing a portion of the diseased dentos, inject (by the aid of a small dental syringe) a strong solution of mor-

phia into the cavity, taking care to have the injection the natural temperature of the teeth, (about 98° Fahrenheit).

From the tubularity of dentine, as well as the communication of the irritated contents of the dental tubuli, absorption is exceedingly rapid. Appreciating the condition, as soon as the patient spits, you are ready with well-formed, sharp excavators to remove more diseased dentos, which you do speedily. If the condition is not much improved, inject it again, and repeat the application a dozen times if necessary.

Thoroughness in application is desirable, and perseverance is frequently essential to success. Teeth that this treatment does not relieve will invite your attention to other remedies.

A substance I have been using with great success is the new hypnotic, chloral hydrate. After suitably preparing a tooth, a strong solution of chloral may be injected; or, the chloral itself may be lightly compressed into every part of the cavity—which usually contains sufficient moisture to dissolve it; if it does not immediately soften, moisten it with a drop of water.

Thirty grains of chloral dissolved in forty of water, makes one fluid drachm of the saturated solution.\*

When I use solid chloral I cover the orifice of the cavity with beeswax, and let the medicament remain for five minutes, when relief may be expected.

Thus far I have not used it in a single case without benefit. In many cases the relief is surprising; a complete absence of sensibility being effected.

It must be mentioned in regard to the use of this, as of all other dental medicines, thoroughness in their application is of the utmost importance, and often imperative to attain the desired result.

When a cavity approaches the pulp and is *very* sensitive, patients usually mention, "the tooth feels warm, but is not painful;" the effect is probably somewhat similar to that of chloroform, when placed in a carious tooth; but far more efficacious in cases of sensitive dentos.

The generally accepted view of the action of chloral, when given internally, is, that it is decomposed in the blood, and chloroform is set free; but its effect is different from the administration of chloroform by inhalation, being more prolonged in consequence of the slow evolution of chloroform.

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\*Lancet.—Braithwaite.

This peculiarity of the hydrate places it in a position between narcotics and anesthetics. Its somniferous principle has readily classed it with the hypnotics. The dividing line between anesthetics and narcotics has hitherto been sufficiently clear, but this drug calls attention to a new position, in some degree like both, but distinct from each.

I would state in conclusion, thus far I have observed no ill effects upon the pulps of teeth treated in the manner described.—*Missouri Dental Journal*.

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### CLEFT PALATE,

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#### STAPHYLOGRAPHY—URANOPLASTY.

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BY J. HENRY CARSTENS.

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(Continued from page 243.)

I can, in the present state of my experience, think of no form of congenital cleft palate in which either one or the other of the above described procedures would not suffice. In acquired defects of the palate, however, other proceedings may be necessary, and we may be required to transplant from one of the palatine or the alveolar processes.

The hemorrhage, during the operation of uranoplasty, is in most cases considerable, sometimes even so strong and sudden as to frighten the operator. The art. palatinæ which ramifies in the periosteum, and must be cut in the incisions before described, is of such size that we have often seen streams of blood the thickness of a quill. As we are, however, always able to control the bleeding by ice water injections, I have never seen great prostration follow the operation. The use of ice water injections cannot be too much recommended; we now use a large 16-ounce syringe, with a nozzle turned at right angle, at the club-formed end of which are several openings. Styptics, as liquor ferri sesquichloridi, which prevent union by first intention, we have never used.\*

In the majority of cases we found the reaction following uranoplasty less than that of staphylography; yet in one instance no change of the pulse was perceptible from the operation to complete

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\*Liquor ferri sesquichloridi is, of all hæmostatics, the most known and used. But it must be used with care, on account of the free hydrochloric acid which the commercial article always contains. It prevents union by first intention, and often causes inflammation and gangrene.

recovery, and we feared that the healing process would not take place, on account of the insufficient reaction.

I do not share the apprehension expressed by some, that exposing the whole arch of the bony palate would cause necrosis or exfoliation. I never saw an instance of it. The bony palate is less easily injured than other flat bones, for instance the bones of the skull, where I found, after rhinoplasty with the use of pericranium, a necrosis like exfoliation of the lamina of the bone.

The hemorrhage from the blood vessels of the bone, which is caused by separating the periosteum, soon ceases, and we can watch the exposed bone at leisure. In a few hours we are unable to distinguish the bone, as it is covered by a thin, dry, varnish-like substance. The first observed color is changed to a yellowish grey verging to red or reddish black. Touch the varnish-like substance and you find it dry. This remains until the seventh or eighth day, when the surface, which, however, still remains dry, gradually changes to yellow. We then notice a reddish tinge, first by small red spots that finally spread over the whole surface. The vascularity increases, and in four to six weeks complete regeneration and cicatrix is produced on the new involucrum palati. After fifteen months we saw one patient, and found the involucrum palati, although smooth and somewhat thin, still so like the normal that one who was not aware of the fact could not have told the difference. The surface was moist, the physiological appearance the same; the pathological formation of follicles has been sufficiently proven; still, I think it would require a microscopic examination to prove that mucous membrane with follicles has here been formed.

This immunity and regenerative power of the bony arch of the palate, is equaled by the same property of the muco-periosteal covering of the involucrum palati.

The muco-periosteal flaps, which are separated in uranoplasty, do not die, although they are stretched between two currents of air in the mouth and nasal cavity, if they are only attached to parts by which they can receive a sufficient supply of blood. This immunity is due, I think, to the periosteum, which is very vascular, being taken off, together with the mucous membrane. The mucous membrane alone does not possess this power, although the fissures have been closed by several operations, always a small flap taken at a time; but flaps of mucous membrane the size of

those mentioned in the above description, could not be taken without danger of gangrene.

Another evidence of the great reproductive power of the above named parts is, that in all ordinary cases, even the most complete congenital clefts of the hard palate, a new formation of bone takes place from the separated periosteum, forming a complete, solid arch. In all cases of congenital cleft palate that remained under observation more than four weeks after the operation, we have been able to prove the new formation of bone. This formation of new bone seems to commence three weeks after the operation and be complete at the end of the fourth, but consolidates more after that time. This, therefore, takes about the same length of time that is required to unite a factured bone by first intention.

The apprehension that the newly formed bony palate may, by retrograde metamorphosis, again disappear, can now be proven without cause by numerous examples, as a factured bone that has healed, in the course of time only gains in solidity, so the bone newly fomed from periosteum only attains more compactness. As the callus in a factured bone is slowly absorbed and disappears, so the arch of the palate, at first rough, gradually becomes smooth, the swollen cicatrices of the incisions at the sides vanish, and leave a normal appearance.

Taking the statistics of our operations as conclusive, it would not be advisable to close the soft and hard palate at one operation, viz., staphylo-uranoplasty. But as it is desirable that this very painful operation be finished at one sitting, I hope that at some future date we may be able to accomplish this successfully. At present, however, I think it advisable, especially if the patients are children, to commence with uranoplasty, and than perform staphyloraphy, the time to elapse between these operations depending on circumstances.

The opinion of Pollock that the operation of staphyloraphy should not be performed before the age of seventeen or eighteen, is based on the failure of eleven cases that were operated upon by Billroth, Passavant and others. Billroth has since operated according to my method on a child twenty-eight weeks of age, with complete success. Still, I think that although the recuperative powers of nature are great in children, it is not advisable to operate before the end of the first year.

The articulation of patients with cleft palate is of a very

stuttering kind, and their speech guttural. In several of my patients I found decided improvement in speaking, when they left the clinic five to eight weeks after the last operation, whom I had subjected to daily exercises in reading and speaking.

A systematic course of vocal gymnastics is not only beneficial but absolutely necessary, to make the operation a complete success. The words of Wutzer are to the points when he says (D. Klinik, 1850, s. 263): "The operation for cleft palate is for the improvement of speech, what tenotomy is for club foot or wry neck; it gives you an opportunity of gaining your object by a systematic course of orthopædic aftertreatment." (Langenbeck, *Archiv. Klinischer Chirurgie*, 1863.)

By this it will be seen that Langenbeck's method differs from all others that have been heretofore made use of, by separating the periosteum as well as the mucous membrane, and using both for plastic purposes.

Until within a few years, surgeons have generally tried to relieve this deformity of the palate by means of an apparatus called obturator. Although these obturators have been made very perfect (especially by the labors of American dental surgeons), they can never take the place of the natural bony arch. An obturator presses on the edges of the fissure, and thereby, in the course of time, causes absorption, and makes the deformity only more extensive.

In the future, no surgeon who keeps up with the advancement of his profession, will think of using such an apparatus when he can relieve his patient permanently by an operation.--*Detroit Review of Medicine and Pharmacy*.

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## EDITORIAL.

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### END OF VOLUME TWO.

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With the present number we close the second volume of this Journal, and in doing so, we wish to thank our friends for the very liberal support they have given us during past year. We are fully aware of the fact that we have not made it as interesting and valuable as it might have been, but we must say that we have not received as much literary assistance from the Dentists of Canada as we might reasonably have expected. Had each one of our readers contributed his mite, by relating his manner of

performing some difficult operation successfully, or of his failure of success, and the reasons for the failure. A vast amount of useful information might have been gained to the profession at large. For the next volume we have promises of contributions from a large number of the Dentists, not only in Canada, but of the States and England, and we trust that as the Journal grows in age, it will grow in the estimation of our readers. As one of the proprietors lives in Montreal and the other in Hamilton, it has been found a little troublesome at times to arrange our accounts with our subscribers and advertisers, and after due consideration it has been decided that it will be best that the proprietorship of the Journal shall revert to Mr. Beers, who was the originator of it. In doing this it is not proposed to change the editorial Management except that we hope to have the assistance, as corresponding Editor from the States, of a gentleman who has already written several articles which have appeared in our columns.

Contributions to the Journal may be sent to either of the Editors.

All accounts *now due*, either for subscriptions or advertisements should be sent to the Editor at Hamilton.

All subscriptions for the future, and all advertisements should be sent to the Editor at Montreal. C. S. C.

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#### CHANG OF PUBLISHING DEPARTMENT.

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In fulfilment of an understanding with our respected colleague, Mr. CHITTENDEN, we will with the next number, again assume the publishing department of the *Journal*; and having made special arrangements for its prompt issue, improved appearance, and the addition of illustrations by one of the best engravers in the Dominion, we venture to believe it will continue to merit the encouragement of the Canadian and American profession. We prefer to let the next number speak for itself. And yet, we aim at still greater improvements, determined to do our best, and give the best we can. The next number will not be issued until the 1st of October, after which the *Journal* will appear regularly on the 1st of every month.

#### OUR NEXT NUMBER.

We must ask our friends to bear with a short delay in getting out the first number of the transfer of the publishing department,

a great deal of extra labor is involved in beginning. We promise to have the *Journal* out sharp on time, on the first of every month. In the meantime we will be glad to receive contributions. The next number, besides much other interesting matter, will contain the following Original Communications:

1. Periodontitis, by Dr. Waite, Liverpool.
2. Rare case of Abnormal Development, (with a wood-cut illustration), by Dr. Lefairve, St. Johns.
3. Dental Hygiene, by Dr. Nelles.
4. Carbolic Acid, by G. V. N. Relyea.
5. Another case of Artificial Teeth in the Stomach, by Dr. Cogswell, Halifax.
6. Drying Cavities, by J. H. Webster, Montreal.

We will be glad to hear from our Ontario friends after the receipt of this number, in the way of contributions. W. G. B.

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#### OUR EXCHANGES.

We return our most hearty thanks to the Editors and Proprietors of the following list of Periodicals, for exchanging with us during the past year.

Dental Cosmos; Dental Register; Missouri Dental Journal; Dominion Medical Journal; Boston Medical and Surgical Journal; Dental Office and Laboratory; American Journal of Dental Science; Pacific Medical and Surgical Journal; Phrenological Journal; Canada Medical Journal; American Homœopathic Observer; Ohio Medical and Surgical Reporter; Hahnimananin Monthly; Boston Journal of Chemistry; New York Medical Gazette; New England Medical Gazette; Buffalo Medical and Surgical Journal; The Educator; Chicago Medical Times; American Journal Materia Medica; Dental Advertiser; The Health Reformer; Dental Times; Detroit Review of Medicine and Surgery; Canadian Star of Odd Fellowship; Gynæcological Journal; Oregon Medical and Surgical Reporter; Philadelphia University Journal of Medicine and Surgery; Medical Independent; Canadian Pharmaceutical Journal; Braithwaitis Retrospect.

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The article on experiments in vulcanizing India Rubber should be credited to J. B. Willmott.

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*To the Editor of the Canada Journal of Dental Science.*

DEAR SIR,—In looking over the report of the proceedings of the Ontario Dental Society as published in the last number of the *Journal*, I notice an error respecting the state of the finances.

The Report says: "The Finance Committee reported a balance

of \$7.00 in hand after paying all indebtedness." I am happy to state that the Treasury is in a much better condition than the above would indicate, The amount of funds now in hand to the credit of the Society is \$79.06.

J. BOWES, Treas.

O. D. S.

Hamilton, July 26th, 1870.

#### CHLORAL HYDRATE NOSTRUMS.

The great success and the growing popularity of that valuable remedy, hydrate of chloral, have led to the putting up for sale of nostrums called "Syrup of Hydrate of Chloral," "True Chloral Anodine," "Elixir of Chloral," "Solution of Chloral Hydrate," etc. Now it is important that physicians, and all others interested, should understand that the new agent cannot be mixed with syrup or other aqueous or spirituous bodies, without soon undergoing spontaneous change which renders it comparatively worthless as a hypnotic. What the nature of this change is, we do not well understand at present. We have specimens of the aqueous solution and syrup prepared two months ago, which have undergone important modifications. In crystalline form, in well stopped vials, the substance keeps perfectly well, and in this form it is probably permanent. If the nostrums just mentioned contain any of the agent, they are worthless, and may be dangerous.

Physicians should prescribe only the crystals, and should be very certain *that they are pure*. The taste of hydrate of chloral is quite unpleasant, but orange juice completely covers it, and so does peppermint water or essence of peppermint. If taken in aqueous solution, let the patient be directed to suck the juice of an orange immediately after swallowing the dose, or mix with the solution a little peppermint water, with syrup of tolu. The following is a good formula:

Take Chloral hydrate,	I drachm.
Aq. menth. pip.,	$\frac{1}{2}$ ounce.
Syrup tolu,	$\frac{1}{2}$ ounce.
Aqua,	2 ounces.

Dose, from one half ounce to two ounces, as may be required.

The mixture should not be prepared in large quantities, nor be kept for any length of time, for the reasons intimated above.

*Boston Journal of Chemistry.*











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